RESOURCE STEWARDSHIP IN ONTARIO

A SHARED RESPONSIBILITY

(For the Management of Secondary Resources and Wastes
from Residential, Industrial, Commercial
& Institutional Sources)

November 1992

ONTARIO
WASTE REDUCTION ADVISORY COMMITTEE

WASTE REDUCTION ADVISORY COMMITTEE

Ontario

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November 16, 1992

The Honourable Ruth Grier
Ontario Minister of the Environment
135 St. Clair Avenue West
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Toronto, Ontario
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Dear Mrs. Grier:

It is with great pleasure that I submit to you, on behalf of the Waste Reduction Advisory Committee (WRAC), the attached report "Resource Stewardship in Ontario: A Shared Responsibility".

With this report, the Committee completes the current phase of its work regarding the development of a comprehensive model for the management of secondary resources and wastes from residential and IC&I sources. This report represents a significant advancement on WRAC's previous work in this area, as reported to you earlier this year in the following two reports:

- "The Shared Model: A Stewardship Approach to Waste Management in Ontario"

- "Organic Waste Action Plan for Ontario".

The Shared Model report dealt with 3Rs policies for primarily dry recyclables, and the Organic Waste Action Plan, with 3Rs policies for wet compostables. This report presents a wider and more consolidated approach for both wet and dry secondary resources and wastes within a new Resource Stewardship Model. Of particular importance in this new Model is the role of variable user-pay mechanisms, which WRAC strongly recommends be adopted as the primary means of financing secondary resource and waste management programs in Ontario.

The Resource Stewardship Model was developed with the same spirit of co-operation and compromise that has marked this multi-stakeholder Committee's work since its inception. Although progress was difficult at times, this consensus report reflects the value members placed on this process.

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The Committee believes that the Resource Stewardship Model, based as it is on the fundamental concept of a sharing of responsibilities for waste management activity, provides a sound basis for financing and operating 3Rs programs in Ontario. The Waste Reduction Advisory Committee recommends that

> **the Ontario government adopt the Resource Stewardship Model as the framework for the development of future 3Rs policies and programs in Ontario.**

We trust that this report will be of assistance to you and the Ministry of the Environment during the continuing development of a new and comprehensive policy for the financing of secondary resource and waste management activity in Ontario.

Yours sincerely,

J. Wendy Cook
Chair

JWC/am

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PREFACE

This report summarizes the major investigative efforts of the Waste Reduction Advisory Committee (WRAC) over the past two years to assess and develop secondary resource and waste management policy initiatives for Ontario.

Formed in mid-1990, WRAC is a multi-stakeholder body providing independent advice to the Ontario Minister of the Environment on the reduction, reuse, recycling, and composting of residential, commercial, institutional, and industrial, non-hazardous solid waste and household hazardous waste in Ontario. (See Appendix A for further information on WRAC's mandate, organization, and membership.)

WRAC would like to acknowledge the contributions of the following individuals who helped with the development of this report and its related investigations:

- Jack McGinnis, Recycling Development Corporation (policy development)
- Bill Goodings, John McIrvine, Jay Stanford, Proctor & Redfern Limited (technical analysis)
- Peter Victor, Peter Stokoe, Murray Trott, VHB-Hickling (economic analysis)
- Derek Stephenson, Brian Nelson, Resource Integration Systems Ltd. (policy development)
- Glenn Munroe, WRAC Manager (report development/writing)
- Mary Rowe, MWR & Associates (workshop facilitation)
- Mimi Keenan, Verte-go Consulting (workshop co-ordination)
- Douglas Lintula, Writer/Editorial Consultant (report development/editing)
- Anne Masterton and Tina Giovinazzo, WRAC staff (text preparation)

WRAC would also like to thank the many concerned parties who responded with their comments to the report "The Shared Model: A Stewardship Approach to Waste Management in Ontario (For Dry Recyclables and the I/C/I Stream), February 7, 1992". As a result of these comments, significant changes were made to the developing Resource Stewardship Model, as reflected in this document.

EXECUTIVE SUMMARY

Introduction

Soon after its formation, the Waste Reduction Advisory Committee concluded that to reach the minimum 50% waste diversion goal by the year 2000 waste management programs in Ontario needed to be substantially altered

- to change the behaviour of those responsible for creating waste;

- to raise funds;

- to distribute equitably the costs and benefits associated with the 3Rs systems required for properly managing wastes and secondary resources.

The result of WRAC's ensuing work in this regard has been

> **the development of the Resource Stewardship Model for the collection, processing, and marketing of dry and wet materials from the residential, and industrial, commercial and institutional (IC&I) waste streams.**

The Resource Stewardship Model is based on the premise that all those who benefit from manufacturing and using goods should bear a share of the responsibility for reducing waste, reusing products and packages, and recycling and composting materials. In some instances, this means Producers of products and packages and Generators of waste sharing responsibility for 3Rs activities; in others, Producers or Generators assuming primary responsibility for such activity. Major distinctions within the Model are as follows:

- Residential and IC&I dry consumables would be the shared responsibility of Producers and Generators.

- Residential and IC&I wet materials and dry process wastes would remain the responsibility of their respective public- and private-sector Generators.

The Resource Stewardship Model is built on existing infrastructures, with key activities being left with those sectors most willing and best able to manage them effectively. Stakeholders would be made accountable through a variety of policy instruments as follows:

- Producers would be subject to a form of "negotiated compliance", bolstered by direct or economic measures, including variable unit charges.

- Generators would be subject to a combination of direct and economic measures, including variable user fees.

Shared Approach

The Shared Approach for residential and IC&I dry wastes encompasses products and packages usually consumed by individuals and which, after a limited use, become waste. Designated products and packages would be clearly defined by regulation. The Shared Approach would operate according to the following "functional split" in responsibilities:

- Producers, through an industry funding organization (IFO), would pay to a network of material recovery facilities (MRFs) a fee for service for processing and marketing the flow of dry recyclable materials, net of revenues received for the materials; they would also be responsible for market development.

- Generators, both individuals and IC&I sources, would be required to source-separate these dry recyclable secondary materials.

- Municipalities, or their contracted agents, and IC&I-engaged private haulers would collect the separated materials and "tip" them for no charge (provided quality standards were met) at the MRFs.

- Municipalities would be allowed certain latitude in making agreements with the IFO regarding their collected recyclable materials, including the right to process and market the materials themselves.

Funding of the Shared Approach would be based on the following:

- Producers would pay, to the IFO, a variable unit charge (VUC) or a fee per unit of product sold. The fee would be based on a 3Rs ranking of the product, as well as the actual waste management costs. By having producers bear the processing and marketing costs of source-separated materials, such costs would become "internalized" within product prices.

- Generators would pay for the collection and disposal of garbage and for the collection of recyclables through municipally charged user fees for curbside collection and tipping fees for landfill disposal. Such fees would be less for recyclables and compostables, more for disposables.

Producers would also belong to relevant sector organizations (SOs), formed on a self-selecting basis, according to types of products. Producers would meet their common financial obligations through the IFO and their 3Rs commitments through an SO. SOs would be responsible for negotiating the targets with the provincial government for their sectors.

The provincial government would pass a "backdrop" regulation aimed at making all Producers members of the IFO and an appropriate SO, and with the purpose of levelling the playing field.

The regulation would define specifically the IFO and would state either

- that designated brand owners must join the IFO, or

- that designated brand owners have the option of joining or not joining the IFO but, if they chose not to join they would be subject to either or both:

    - paying an ongoing levy to the government greater than the highest contribution paid into the IFO, or;

    - a prescribed "negative" label on all of their products and packages.

Government-Producer agreements would be established as follows:

- through a memorandum of understanding (MOU) negotiated between the IFO and the provincial government;

- through separate MOUs negotiated between the SOs and the provincial government;

These negotiations would be time-limited. They would be followed by a review by other stakeholders to ensure agreements reflected their concerns. This process would also be time-limited.

The provincial government would monitor, through the provision of data from the IFO and SOs, the progress of these organizations towards meeting the 3Rs targets contained in their respective MOUs. If a sector were unable to meet the targets set out in its MOU, that sector would be subject to a regulatory approach developed by government in consultation with the SO.

For their part municipal and IC&I Generators would be required by regulation to source-separate specified recyclable materials so as to broaden the recycling infrastructure. In addition, municipalities would be requested to implement variable user fees as an incentive to effect 3Rs behaviour change amongst householders and to provide the funds to cover the collection costs.

WRAC recommends that the Ministry of the Environment (1) promulgate by the end of 1993 the backdrop regulation which is designed to bring all designated Producers in Ontario into the

IFO and prescribed SOs, and (2) negotiate MOUs with the IFO and the SOs as soon as possible after the promulgation of the regulation and within a specified time frame.

Generator Approach

The Generator Approach for residential and IC&I wet materials would leave responsibility for managing these materials with the Generators. The Producers of such materials are either hard to identify or have little control over product design or market development. The Approach would work as follows:

- Municipalities would be responsible for wet wastes generated by individual householders, who, in turn, would pay for collection and processing through a variable user-fee system.

- IC&I Generators would pay private waste management firms, including haulers, or municipalities for the collection and processing of their wet wastes.

- Where advantageous to both parties, municipalities and private agents could form joint ventures for collecting and composting materials.

Wet materials would end up in a variety of uses, based on a 3Rs hierarchy; however, the bulk of it would go to centralized composting facilities.

Municipal funding demands would be met not through general revenues but variable user fees as follows:

- operating costs would be recovered from fees charged for tipping wet materials at composting facilities;

- capital costs would be drawn from reserve funds built up over time from variable user fees, tipping fee surcharges, and similar levies.

As for private funding demands, capital costs would be covered by investors, and operating costs by tipping fees.

WRAC recommends that this approach for residential and IC&I wet materials be instituted by 1996, based on provincial subsidies being ended for municipal wet waste management programs (excluding backyard composting), the municipal adoption of user pay programs, and the mandatory source separation of wet wastes.

Key to ensuring the necessary investment in processing facilities for wet wastes will be the banning from landfill of all organics in Southern Ontario by 1998.

Section 1

RETHINKING WASTE MANAGEMENT

THE CURRENT DILEMMA

The current secondary resource and waste management system is not sustainable. It has evolved as a means of dealing with materials for the most part deemed expendable by each and every member of society, from individuals to corporations and institutions. Until fairly recently, the main concern has been how to get rid of these materials as cheaply as possible. With a growing environmental awareness, however, has come the realization that simply "getting rid" of expendable materials creates a number of long-term problems. The most obvious problem is the lack of disposal options, particularly in southern Ontario.

From an overall environmental perspective, and despite the high profile of the landfill issue, the scarcity of disposal options is not the most important reason for re-designing the current waste management system. Depletion of resource and energy supplies, along with the environmental degradation resulting from their over-utilization, must be recognized as the most important consideration in managing wastes. Using energy and resources efficiently must become the cornerstone of our future economic systems.

Given these challenges, the wholesale adoption of 3Rs options, ranging from source reduction to composting, would appear to be a logical course of action. However, as the largely successful Blue Box programs have demonstrated, reducing wastes does not necessarily reduce costs. On the contrary, municipalities have found that the costs of running their Blue Box programs have not decreased over time, as anticipated, and some have even talked of discontinuing their programs. Moreover, municipalities fear that their financial problems would be exacerbated by the expansion of their recycling programs and by the creation of centralized composting programs. Overall, the situation as it now stands

appears to pit environmental concerns against economic constraints, all against the backdrop of limited and expensive disposal options.

CREATING A MORE SUSTAINABLE WASTE MANAGEMENT SYSTEM

Defining Sustainability

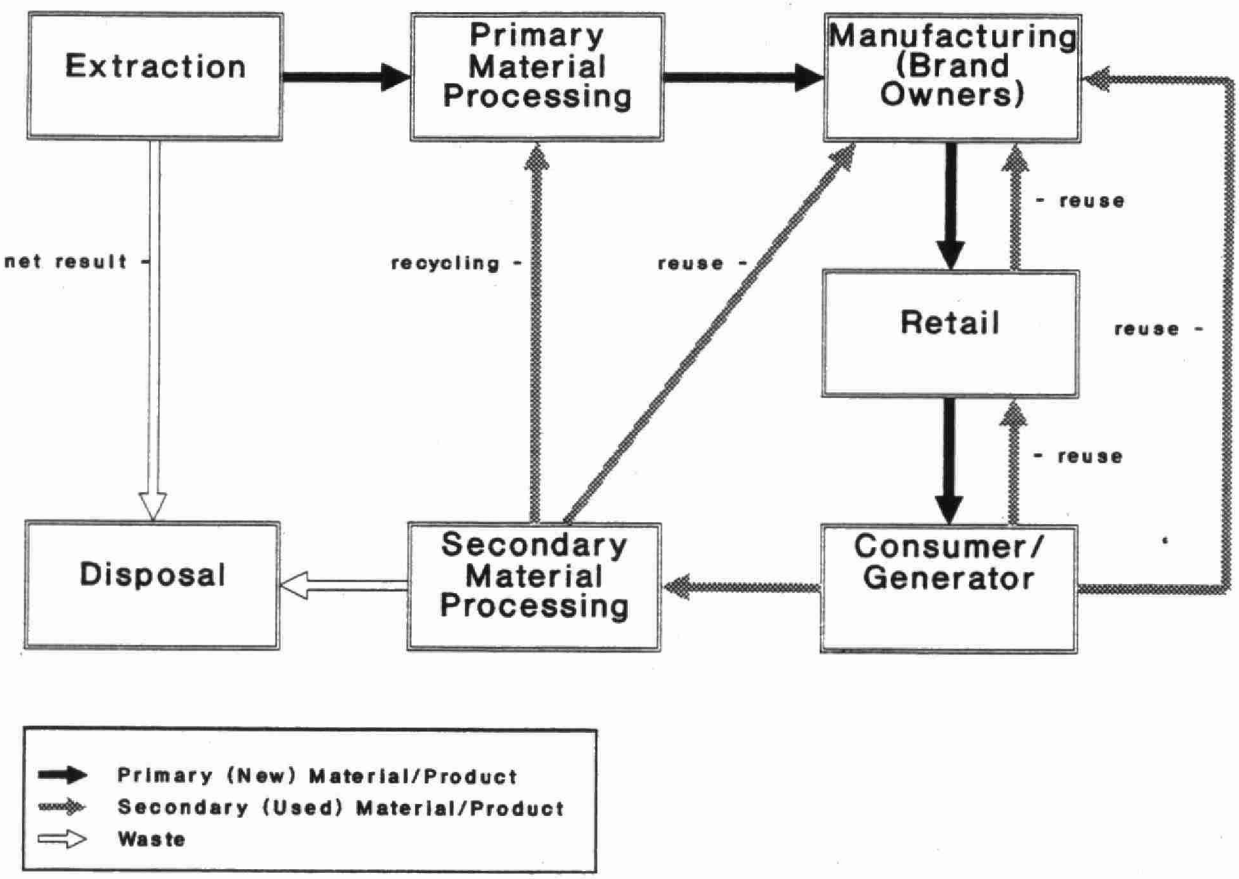
The Brundtland Commission, in its landmark 1987 report Our Common Future, coined the term *sustainable development*. One of the key features of this concept is the need to integrate economic and environmental factors into the decision-making process to ensure that society's current needs are met without compromising the needs of future generations. Applying this criterion to waste management creates a new emphasis on resource and energy conservation. In order to ensure that supplies of raw materials, sources of energy, and the quality of the physical environment can be maintained indefinitely, the efficiency of resource use must be maximized.

Figure 1.1 is a simplified representation of the path of materials from their extraction as resources through processing and manufacturing processes to retail markets and the consumer, and then on to reuse, recycling and disposal. The net effect of the pre-consumer economic activity is the transfer of materials from their virgin state, where they are fairly concentrated and thus have a high potential value, to a state in which they are diffuse and non-segregated and thus have little or no potential value. The purpose of conservation activity is to maximize the amount of benefit that society receives from any material before it reaches the disposal end. This can be done through any combination of 3Rs activities, from source reduction through to recycling and composting.

If the 3Rs hierarchy (reduction, reuse, recycling) were built into the system, and the "loop" were closed, the minimum amount of waste would be disposed of for any given amount of economic activity. This would greatly increase the likelihood that the rate of usage and/or depletion of these resources could be slowed to such a degree that supplies for future generations would be

FIGURE 1.1

CLOSING THE LOOP: THE PATH OF MATERIALS THROUGH THE ECOMONY



assured. The success of such an approach would not only resolve Ontario's current waste management dilemma, but also move the province significantly towards its 50-per-cent waste-diversion goal by the year 2000.

Towards Resource Stewardship

Deep concern over the prevailing waste management dilemma in Ontario pervaded the deliberations of the Waste Reduction Advisory Committee as it began its work. Soon after its formation in late 1990, the Committee identified the need for the current waste management system to be substantially altered. While pursuing other related matters, WRAC initiated investigations in this area, starting with a study of 3Rs funding mechanisms. This work opened up a line of investigation that WRAC has pursued to the present day:

> **the development of the Resource Stewardship Model for the collection, processing, and marketing of dry and wet materials from the residential and IC&I waste streams.**

Resource stewardship encompasses the joint responsibility that businesses, institutions, municipal governments, the Ontario government, and individuals have in protecting the land, resource base, and environment for the future. (See Appendix H for a definition of "resource stewardship" and other terms used in this report.) It arises from the twofold need (1) to change the behaviour patterns of all those involved in creating and generating waste and (2) to distribute equitably both the costs and the benefits of the 3Rs systems established for managing both wastes and secondary resources.

Very early in the process, WRAC members were asked whether the purpose of the 3Rs funding mechanisms they were considering was to raise money to fund the 3Rs or to change behaviour. The unanimous answer was "both". The Committee feels strongly that to meet the objectives of increased sustainability, both waste and secondary resource management systems must work to

permanently change the way we all behave. Only when all parties to economic activity accept their responsibilities in this regard will such systems function properly and become more sustainable.

The Waste Reduction Advisory Committee strongly believes that implementation of the Resource Stewardship Model presented in this report would help to shift the current focus away from disposal and would create a more sustainable system for reducing wastes and managing secondary resources in Ontario, clearly defining as it does the responsibilities of both the Producers of products and packages and the Generators of waste. Together, these parties are the stewards responsible for the resources we use and hold in trust for the future.

Section 2

DEVELOPMENT OF RESOURCE STEWARDSHIP MODEL

GENERAL BACKGROUND

WRAC's development of the Resource Stewardship Model took place over an 18-month period. In the process, it evolved through several stages of research and analysis as follows:

- **Assessment of how recycling programs should be financed.** A variety of financial mechanisms were selected, including user fees for Generators, tipping fee surcharges, variable unit charges for Producers, and deposit/return systems on a selected basis. (See Appendix G for a description of the financial mechanisms evaluated.)

- **Development of three possible models (private, quasi-public, shared) for financing 3Rs programs.** Each model incorporated basically the same package of financial mechanisms but within differing frameworks of roles and responsibilities for the private and public sectors. The work to this point was summarized in the "Phase I Report on the Development of a 3Rs Funding Model for Ontario, July 1991".

- **Selection and further development of Shared Model for 3Rs programs.** Primary emphasis of the Model was on dry recyclables. Its scope and proposed implementation were outlined in "The Shared Model: A Stewardship Approach to Waste Management in Ontario, February 7, 1992".

- **Development of an action plan for organic (wet) wastes.** This work included consideration of the roles and responsibilities of all parties concerned with organic wastes, the formulation of guiding principles for organic waste management, and the creation of a hierarchy of end uses for these materials. The results were presented in an "Organic Waste Action Plan for Ontario, July 1992" (see Appendix E).

- **Consolidation of Shared Model and Organic Waste Action Plan into Resource Stewardship Model** for both dry and wet materials from the residential and IC&I waste streams.

Throughout this process, WRAC conducted wide-ranging studies into several related subjects, the results of which variously influenced the Model's development. Topics of particular importance included the following:

- **user fees** for secondary resource and waste management services (see Appendix C for WRAC Position Paper);

- **target setting** as a waste management tool (see Appendix D for WRAC Position Paper);

- **waste minimization** measures for a WRAC 3Rs strategy;

- **deposits** as a waste management tool.

Taken together, the studies conducted by WRAC have provided the Committee with a wider understanding of the issues pertinent to the development of management systems for secondary resource materials and their application to Ontario's circumstances.

THE PROVINCIAL CONTEXT

While developing its Resource Stewardship Model, WRAC monitored other related initiatives. These included Ontario's new Waste Management Act and three initiatives papers issued by the Ministry of the Environment on various aspects of waste management policy and a discussion paper released by the Ministry of Municipal Affairs on municipal waste management powers.

The Waste Management Act (formerly Bill 143) passed into law on April 23, 1992. This legislation provides the Ontario government with a regulatory framework for achieving its waste diversion goals and powers for implementing additional legislation.

The Act contains amendments to the Environmental Protection Act with respect to waste management powers as well as new

legislation related to the current landfill siting process within the Greater Toronto Area. The Act provides the necessary legislative powers in order to implement the initiatives proposed in the Ministry of the Environment Initiative Papers.

Initiatives Paper No. 1 (Regulatory Measures to Achieve Ontario's Waste Reduction Targets) provides details and regulatory requirements for the waste reduction programs described in the new Waste Management Act. The Paper includes: measures to clarify and streamline approvals for recycling and composting sites; requirements for major IC&I waste Generators to implement source separation recycling programs; waste and packaging audits and workplans; requirements for municipalities of a certain size to implement source separation recycling programs for specified materials; and requirements for certain municipalities to implement the source-separated collection and composting of leaf and yard waste.

Initiatives Paper No. 2 (Waste Management Planning in Ontario) addresses the lack of clarity and certainty in existing regulatory requirements and process support for waste management planning in Ontario. The Ministry has proposed a Waste Management Systems Planning (WMSP) Program to help municipalities with the development of a comprehensive system for managing wastes and secondary resources produced within a specified study area for a minimum planning period.

Initiatives Paper No. 4 (Measuring Progress Towards Ontario's Waste Reduction Targets) addresses the issue of how to measure waste diverted from disposal by both the public and private sectors. The Paper proposes the development of several measurement formulae and a Waste Diversion Information System (WDIS). It also presents a compilation of Standard Material Classes for standardizing waste material categories and thus easing data collection.

The MMA Initiatives Paper (Municipal Waste Management Powers in Ontario) addresses the inadequate scope of existing municipal authority regarding the development of more complex waste and resource management systems. The Paper includes a discussion of

areas of inadequate or inconsistent powers and duplication and overlap of powers between certain municipalities and the province.

WRAC reviewed the foregoing documents and submitted formal responses regarding the MOE initiatives papers and the MMA discussion paper to the Minister of the Environment. Some of the recommendations contained in these responses are reinforced in this report. (See Appendix I for a summary of WRAC's responses to the papers still under review, including all of the recommendations it made regarding them.)

GUIDING PRINCIPLES

The development of the Resource Stewardship Model through its various stages was based upon a variety of guiding principles or precepts. At its core is the central tenet of stewardship: that responsibility for the 3Rs must encompass all concerned from the Producers of products and the users of packaging to the Generators of wastes. Thus, those who benefit from producing goods and those who benefit from consuming goods should both bear some degree of clear responsibility for the 3Rs, including costs. WRAC also based much of its decision-making upon the seven 3Rs planning principles it established near the outset of its work (see Appendix B). In particular, WRAC drew heavily upon the following principles:

- **The 3Rs hierarchy.** The hierarchy of source reduction, reuse, and recycling is endorsed and, normally, priority will be given to promoting this hierarchy. However, in some situations, it may be environmentally better to promote recycling to conserve resources rather than to promote source reduction*.

- **Responsibility/authority linkage.** No sector, it was decided, should be held responsible for any component of

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* If promoting source reduction results in a non-recyclable product or package, or in greater energy use per unit product, it may be better environmentally to promote recycling. Life cycle analyses (LCAs) may be able to shed some light on individual examples.

Ontario's 3Rs program without being given the authority to effectively control the manner in which it fulfils its responsibilities. Each sector that is responsible for participating in new programs should be empowered to guide its waste reduction and recycling actions.

- **A "level playing field".** The rules of any waste management program, it was determined, must treat equally all those affected, including domestic and foreign products and services, small and large companies, everyone in all parts of the province, and anyone holding any responsibility for creating waste.

These basic principles underscored WRAC's development of both its original Shared Model for primarily dry materials and its Organic Waste Action Plan for entirely wet materials and, finally, the combining of the two approaches within the Resource Stewardship Model.

DETERMINING RESPONSIBILITIES WITHIN THE MODEL

The Resource Stewardship Model provides a **framework** for assigning 3Rs responsibilities for all waste streams. To date the Model has been developed to accommodate the residential and IC&I waste streams. Further research is required to apply the Model to other important waste streams, such as household hazardous, construction and demolition, and "white goods".

The Resource Stewardship Model is based on the premise that those who produce products and those who generate wastes should be held appropriately responsible for the consequences with respect to the waste and secondary resource management of their respective activities. In some instances this means Producers and Generators sharing responsibility; in others, it means Producers or Generators assuming sole responsibility. The extent of responsibility assignment depends upon the following:

- the degree to which the Producer's role can be identified in a given situation;

- the ease or difficulty with which Producers or Generators can be assigned responsibility, based on historical roles and current practices;

- relevant technical factors such as product toxicity. (Some argue, for example, that 3Rs responsibility for household hazardous products should be left entirely with the Producers and packagers of such products.)

How responsibilities are assigned to various parties also depends on how their roles could affect the overall sustainability of the secondary resource and waste management system:

- Industry, in its "Producer" role, controls the design of products, as well as the purchase and utilization of secondary resources. Producers could re-design their products for the 3Rs and utilize more secondary materials in manufacturing processes. Under the Model, Producers are any firms that manufacture, distribute, or import products and/or fill packaging (i.e., brand owners).

- Generators control their participation in available reuse and recycling programs and, to some extent, their purchasing practices (as consumers). In turn, municipalities control how individual residential Generators can effectively participate in recycling and composting programs and also contribute financially toward such programs. Together Generators and Municipalities could ensure that their used products and secondary materials are made available to recyclers in a state that permits their ready processing or reuse. Under the Model, Generators are any individuals or organizations responsible for putting a material into the waste or secondary resource stream, or disposing of it.

- The provincial government serves a leadership role, oversees the undertaking, monitoring, and enforcing of waste management programs, and provides various support services. It would (1) ensure that the Model is implemented, (2) supervise its operation, and (3) hold the various parties accountable.

Figure 2.1 summarizes the results of applying the above criteria to the various waste streams. When responsibilities are assigned by waste stream, a number of different approaches fall out. The sum total of these approaches is what WRAC is calling the Resource Stewardship Model.

When applied to waste streams, it was determined that responsibilities should be divided as follows:

- Producer Approach. Household hazardous wastes have been tentatively shown as the primary responsibility of their Producers. The Producer Approach is not discussed in this report due to time constraints and the need for further assessment by WRAC.

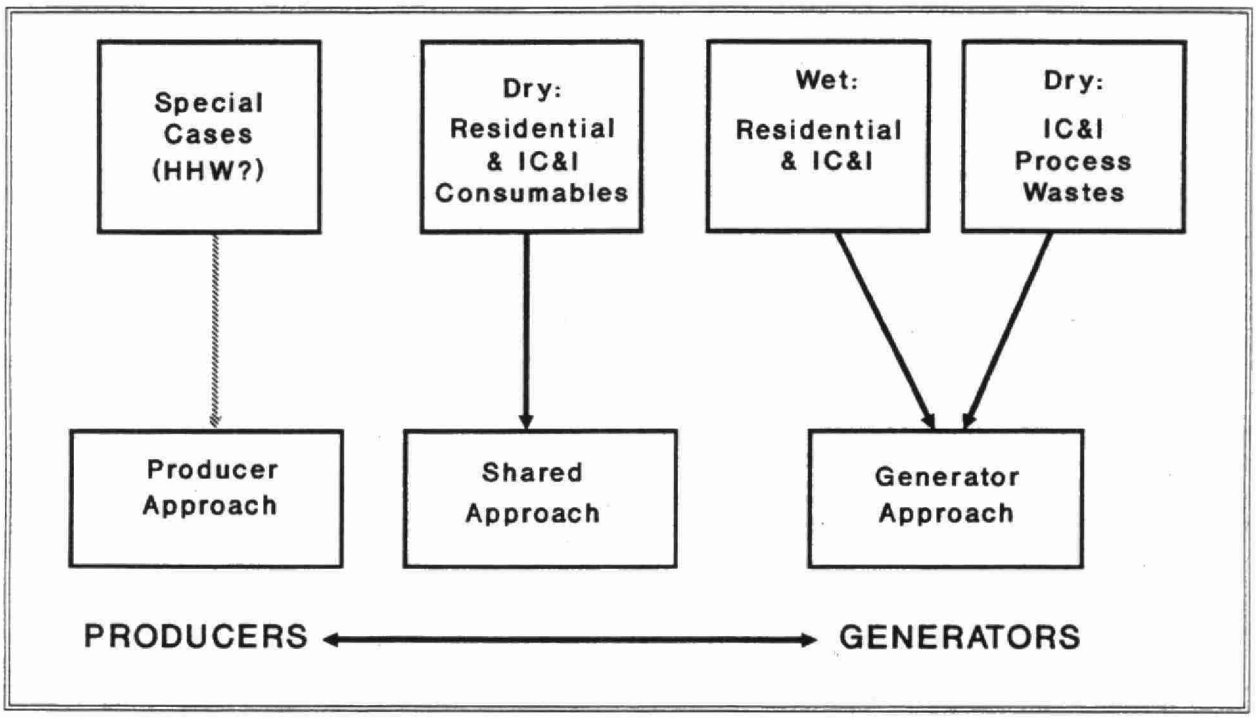
- Shared Approach. Dry residential and IC&I wastes would be the shared responsibility of Producers and Generators.

- Generator Approach. Wet wastes (residential and IC&I) and dry wastes generated as process wastes would remain the responsibility of their respective public- and private-sector Generators.

The responsibility for dry wastes has been assigned to both Producers and Generators, through a shared approach, as it is recognized that both of these groups have vitally important roles in effecting waste reduction and secondary resource recovery of certain products and packages.

The overall responsibility for wet wastes has been left with their Generators as it is difficult to assign responsibility for such materials to any one producing sector. The Producers of the food component of the wet stream consist primarily of farmers and the food processing industry. Neither group has any significant control over the design of the "product", and neither group has the ability to adequately develop markets for composted materials. Also, no one producing sector can be held accountable for the leaf and yard waste component of the wet stream. It is

FIGURE 2.1
RESPONSIBILITIES BY WASTE STREAM



primarily householders or IC&I Generators, who, by changing their behaviour, can impact most significantly on organic waste reduction and re-utilization.

Similarly, the responsibility for dry IC&I "process" wastes (waste material generated in the manufacturing process) has been left with their Generators. Assigning responsibility to Producers for these wastes would not necessarily have any desirable impact on product design as the "producers" in this case are basically suppliers of the raw materials intended for use in the manufacturing process. In cases where changes in the behaviour of these suppliers does have some importance, leaving the responsibility for these wastes and secondary resources with the Generators continues to make sense because of the influence these customers have with their suppliers.

The strength of the Resource Stewardship Model is that it is built on existing infrastructures and leaves key activities with those sectors most willing and best able to manage them effectively.

MAKING STAKEHOLDERS ACCOUNTABLE

With responsibilities defined, the question arises as to how a government ensures that the responsibilities are accepted and carried out on an on-going basis. In addressing this question, WRAC considered the three basic types of policy instruments put forward by the Organization for Economic Co-operation and Development (OECD). These can be summarized as follows:

- **Direct intervention.** Measures that regulate behaviour directly, through restrictions or requirements. Examples include product bans, mandatory source separation, mandatory waste audits, etc.

- **Economic intervention.** Measures that influence decision-making by intervening in the marketplace. Examples include recycling program subsidies, market development initiatives, and various funding mechanisms, such as a variable unit charge (VUC).

- **Negotiated compliance.** Voluntary agreements regarding the achievement of certain objectives, with the understanding that failure to meet those objectives would result in direct or economic regulation. One example is the National Packaging Protocol (NAPP).

WRAC's initial discussions on waste minimization policy focused on measures of direct intervention. In its first major report to the Minister, entitled "Intermediate Action Plan for Waste Minimization", the Committee recommended several such measures, including mandatory waste audits and bans of specific materials from landfill. WRAC still supports these types of measures where appropriate. However, the focus of much of the Committee's work over the past year and a half has been on the other two broad categories of instruments defined by the OECD: **negotiated compliance** (as set out in the Shared Approach); and **economic intervention** (more specifically, user-pay instruments).

To implement the Resource Stewardship Model in Ontario, WRAC proposes using a mix of policy instruments drawn from all three of the OECD categories. Regarding the Shared Approach (or residential and IC&I dry stream):

- Generators would be subject to a combination of direct and economic methods of intervention (user fees);

- Producers would be subject to a form of negotiated compliance, with some degree of either direct or economic intervention required to level the playing field.

WRAC firmly believes that this fundamental difference in approaches -- direct and economic intervention mechanisms for Generators, primarily negotiated compliance for Producers -- is justified by the different needs that arise from the different roles these two groups have played and continue to play in waste management.

For example, Generators and their agents have traditionally been involved in the collection of waste. The disposal of materials when their value becomes negligible has been part of their daily

lives. More recently, most have become actively involved in the segregation and collection of a few selected secondary resources. However, despite the obvious eagerness of many to do more, they have been constrained by the design of many products and packages and by the limited nature of most 3Rs programs. As a result, Generators need a relatively convenient and cost-effective infrastructure for reducing wastes and recovering secondary resources. WRAC believes this can be provided best through regulation preceded by full consultation.

Producers, on the other hand, have many concerns with their products other than their responsible management as wastes or secondary resources (e.g., marketability, efficiency of function, product safety, etc.). Until recently, the ultimate fate of their products or packages has not been a factor in their decision-making. For this reason, producers need some flexibility to be able to tap their creativity and to find cost-effective solutions to the 3Rs. WRAC believes that a voluntary approach within a regulatory framework would achieve this end.

Section 3.0

CREATING AN EQUITABLE FINANCIAL SYSTEM

PAYING FOR BENEFITS RECEIVED

A key component of a waste management system based on resource stewardship is an equitable method of financial support that corresponds to the roles and responsibilities of all participants. By allocating financial responsibility to those who use and benefit from the system, financial sustainability could be achieved together with other benefits such as necessary behavioural change and improved environmental and secondary resource management.

Currently, secondary resource and waste management services in Ontario are primarily financed by disposal tipping fees and property taxes. In most municipalities, the majority of costs are recovered through tipping fees paid by industrial, commercial, and institutional (IC&I) Generators. As a result, these Generators are subsidizing the typical householder's waste collection and disposal costs, and no incentive exists for the latter to reduce wastes.

WRAC does not support the use of the tax base for funding waste disposal or 3Rs activities. Taxes are spread across society and bear no relationship to an individual's behaviour or use of a public service. Thus, a tax-based waste management system subsidizes those who are wasteful at the expense of those who are not. No incentive is provided to reduce waste. In fact, those who do take voluntary action to reduce waste are financially penalized.

Rather than depend on these inequitable and indirect methods of raising funds for secondary resource and waste management, WRAC believes that user-pay mechanisms represent a more equitable method of allocating costs based on use of the service. A system based on resource stewardship principles, in which each and every

stakeholder accepts responsibility for resource conservation and environmental sustainability, must reward those who accept that responsibility and penalize those who do not.

WRAC believes that a user-pay charge should be calculated by considering the true costs of handling a product or package through its entire lifetime, including the costs of secondary resource and waste management services. These costs would then be borne directly by the users of products or packages, thus continually encouraging responsible use and management of secondary resources and appropriate 3Rs behaviour.

Producer Fees

At the Producer level, WRAC proposes that individual firms pay their share of the waste management system costs in the form of a variable unit charge (VUC). This charge would reflect the relative waste management impacts of different products and their systems. For example, the charge could have three levels: the lowest level would apply to reusable packaging; the middle level would be a range of charges, applied to recyclable materials, which would reflect the actual cost of processing and marketing them; the third and highest level would apply to products or packages destined for disposal.

Any goods manufactured within the province but exported for sale would be exempted from the VUC. Goods manufactured elsewhere but imported into the province would be included in the program through the mandatory participation of importers*. Through the use of a VUC, Producers of all products consumed within the province would bear the costs associated with environmentally acceptable management of those resources used in both product and package. These costs, in turn, would be incorporated into product prices. This concept, known as cost internalization, forms the basis of the financial responsibility that is requested of Producers under the Resource Stewardship Model.

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* WRAC recognizes that "importers" range from small distributors to large retail chains, and that including all of them as "Producers" in a VUC system would be complex. However, their participation is necessary to ensure a level playing field within Ontario. See Section 4 for additional information.

Generator Fees

In order to reflect the responsibilities of Generators within the Resource Stewardship Model, WRAC proposes, for residential wastes and secondary resources, that municipalities implement a user-fee system, commonly referred to as a "generator-pay" or "pay-by-the-bag" system. User-fee systems are already the norm for IC&I Generators whose waste and resources are handled by private companies.

As source reduction, reuse, recycling, and composting must be encouraged whenever possible and disposal discouraged, WRAC perceives a strong need for economic incentives to encourage this societal change. While true costs must be considered in determining all user fees, WRAC recognizes that user fees for waste management must be higher than user fees for secondary resource management to provide for the necessary economic incentive. As such, a variable user-fee system for residential secondary resource and waste management services is recommended.

Variable user fees would provide the incentive for householders to shift their behaviour away from disposal practices and towards the 3Rs. In particular, source reduction activities such as backyard composting and buying minimal packaging would be encouraged and rewarded.

Implementing user fees for services that have been historically provided without charge to all members of the community raises the question of equal access to public services and the ability of some members of a community to pay for these services. By recovering the cost of a service through a general levy based on property taxes, use of the service by some members of the community is subsidized. In recovering the cost directly through user fees, residents with low or fixed incomes may be unable to pay such fees. However, social service systems that address this issue of ability to pay by certain members of a community do exist within municipalities for other basic services and needs. User fees for waste management could therefore be incorporated into needs assessments -- in a manner similar to utility costs.

Experience suggests that illegal dumping may result from the implementation of user-fee systems, as it has from increased tip fees and material bans at landfill. Access to comprehensive recycling services, public education, and monitoring immediately after implementation would be required to address this problem.

Recovery of waste management costs through the general levy has resulted in the public perception that waste collection and disposal is provided as a free service. As a result, when direct user fees are implemented, a common perception is that a double payment is being made indirectly through property taxes and directly through user fees. In order to address this potential problem effectively, WRAC recommends that costs for secondary resource collection and waste collection and disposal be listed as separate items on municipal property tax bills as a preliminary step to the introduction of user fees. Further, in order to prepare householders for the transition to a user-fee system, comprehensive public education, promotion, and consultation must be undertaken at the municipal level with respect to the impact on householder behaviour, the actual costs associated with resource and waste management systems, and the role of user fees in addressing system inequities and encouraging behavioural change.

In addition, WRAC recommends that sufficiently high disposal tipping fees be applied on a per-tonne basis to all waste delivered to landfill sites as an additional incentive for municipalities and private haulers to induce their residents and clients to practice the 3Rs. If disposal were to be clearly the more expensive option, the major barrier to behavioural change, economic penalty, would be replaced with a built-in incentive. (See Appendix C for specific WRAC recommendations on the implementation of variable user fees for Ontario.)

SUMMARY BENEFITS

In summary, by clearly assigning financial responsibilities to the relevant sectors through user-pay mechanisms, WRAC believes that

- Producers would be more conscious of the reusability and/or recyclability of their products and packages because they would have to pay the costs of recycling them;

- Generators would be more conscious of the products and packaging that they purchase and ultimately dispose of, because the more they waste the higher their cost;

- 3Rs programs would be adequately funded with monies available for expansion and technological advancements;

- costs would be distributed more equitably and in relation to the responsibility of each stakeholder;

- environmentally sustainable waste reduction and secondary resource management would be advanced.

Given the above and the effectiveness of user-pay systems as economic incentives, WRAC recommends:

that the provincial government promote the use of user-pay systems, as proposed in this report, for secondary resource and waste management programs.

Section 4

THE SHARED APPROACH FOR RESIDENTIAL AND IC&I DRY WASTES

INTRODUCTION

The system proposed under the Shared Approach encompasses products and packages usually consumed by individuals and which, after a limited use, become waste*. These "designated products and packages" or "designated materials" include food and beverage containers, display packaging, textiles, magazines, telephone books, newspapers and other papers, many of which are now being recycled through Blue Box programs across Ontario. These products are consumed to the greatest extent in residences, although they are also consumed in offices, industrial locations, institutions, and elsewhere. As consumers of these products are individuals, they have little "clout" in influencing Producers in the design of their products and packages for increased 3Rs activities and, as a result, progress is slow. It is primarily for this reason that a new approach -- the Shared Approach -- is being proposed.

Within the Shared Approach, as indicated earlier:

- a Producer is any firm that manufactures, distributes, or imports products and/or fills packaging (i.e., brand owners);

- a Generator is any individual or organization responsible for putting a material into the waste or secondary resource stream or disposing of it. Under this approach, for the residential waste stream, the municipality assumes responsibility as the Generator on behalf of individual households, for this responsibility can be transferred back

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* It is recognized that the definition of products and packages included under the Shared Approach is not rigorous and that further clarity is needed with regard to the precise products and packages to which the Shared Approach would apply. WRAC proposes that this occur through the Ministry of the Environment and that the required rigorous definition be included in the backdrop regulation discussed later in this section.

to the householder by means of generator-pay systems. A similar responsibility is assumed by private haulers on behalf of IC&I waste Generators.

The intent of the Shared Approach is to spread some of the responsibility for the 3Rs from the Generators of waste back to the creators of the designated products and packages that become waste. This stewardship approach is based on the view that those who benefit from producing goods and those who benefit from using goods should both bear some degree of responsibility for waste reduction, including costs. Responsibility for the collection and disposal of mixed wastes would remain with the Generators and their agents.

In considering the preferred means of assigning responsibilities to both Producers and Generators, WRAC, as previously mentioned, took account of the importance of ensuring that those to be held responsible for 3Rs activities should also have an equivalent amount of control over their participation in such activities.

Failures in the current system attest to the value of this principle. Municipalities have responsibility for the management of residential secondary resources and wastes in Ontario, but they have no authority over product or package design. Expensive-to-recycle or non-recyclable packages and products are left as the municipalities' problems, but they have no control over the changes necessary to solve these problems. As a result, municipalities are often unwilling to expand their current level of 3Rs activities. On the other hand, industry associations have stated their unwillingness to financially support municipal recycling programs for a similar reason: they would have no authority to control the costs of potentially inefficient programs. The result has been that neither party has been willing to take on any further responsibility, and progress has been halted. This dilemma constitutes a graphic illustration of why a system that does not link clearly defined responsibility with commensurate levels of authority is unworkable.

OVERALL FRAMEWORK

The Shared Approach gives sufficient authority to both Producers and Generators for them to control and effectively fulfil their responsibilities for minimizing waste and recycling secondary resources. In addition, the Shared Approach strives to ensure that the responsibilities assigned build on previous experience and/or are assigned to the party most able and willing to carry out a new responsibility.

Responsibilities under the Shared Approach would be split between Producers and Generators depending on function as indicated in Table 4.1 and as illustrated in Figure 4.1. The key components of this functional split would be as follows:

- Generators would be required to source-separate designated dry secondary recyclables from residential and IC&I sources.

- The separated recyclables would then be collected by municipalities or their contracted private-sector agents on behalf of residential Generators and by haulers engaged by IC&I Generators. Collected materials would be "tipped" for no charge at a material recovery facility (MRF), provided certain, yet to be determined quality specifications were met*.

- Producers, through an industry funding organization (IFO), would pay a "fee-for-service" to the MRFs that would process Ontario's flow of designated dry secondary materials. This fee would cover the cost for the processing and marketing of these materials net of revenues.

Also, under the Shared Approach, municipalities would be allowed certain options:

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* The specifications for the dry recyclable stream would be based on a standard for a certain number of collection streams. For example, the standard could be for a three stream collection system of dry recyclables, organics, and mixed waste, or for two or more dry recyclable streams, organics, and mixed waste. The determination of the standard requires, in WRAC's view, further economic analysis and subsequent input by relevant parties.

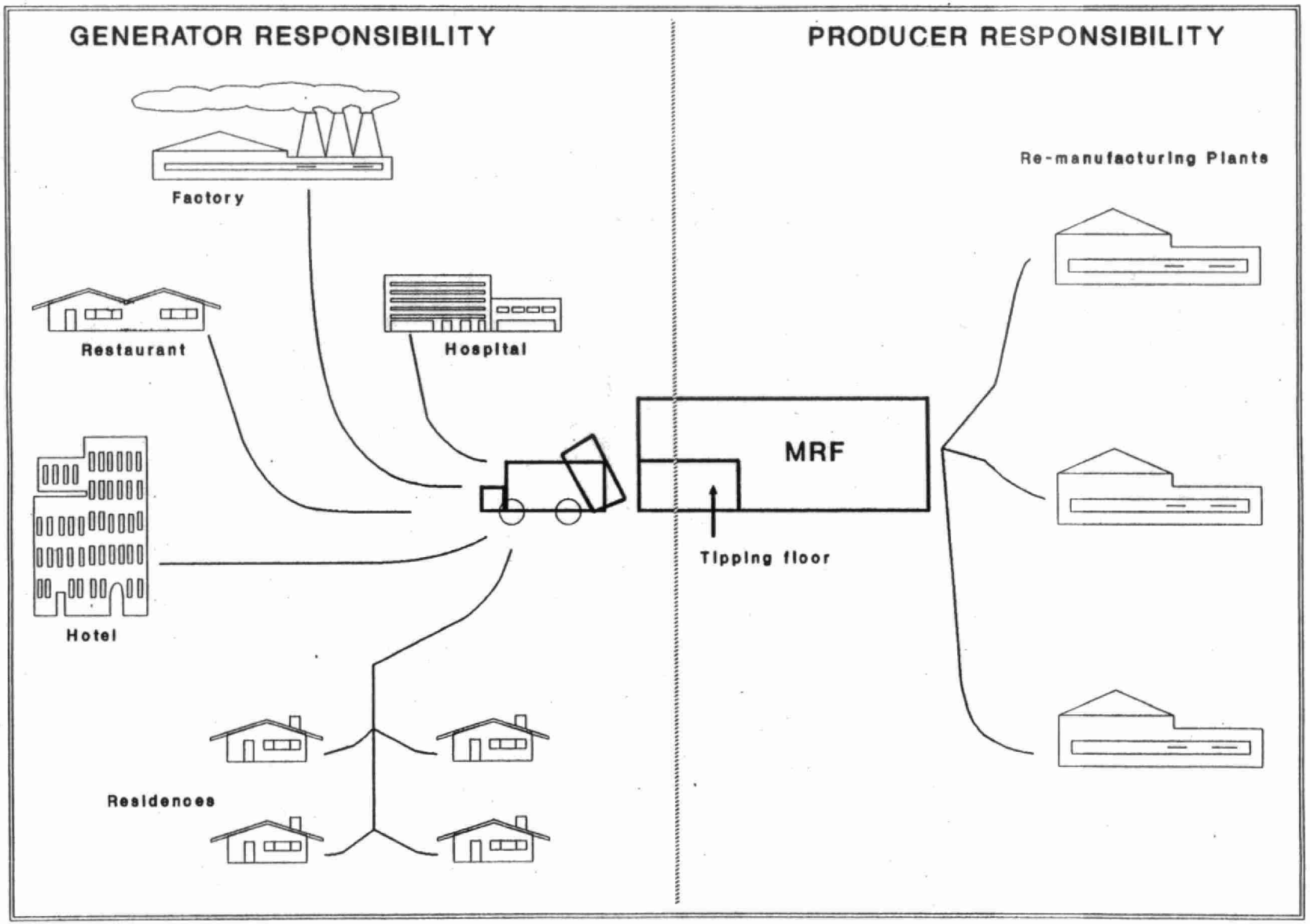
TABLE 4.1

SUMMARY OF ROLES AND RESPONSIBILITIES IN SHARED APPROACH

RESPONSIBILITY		WASTE STREAM	
		Dry Residential (designated	Dry IC&I materials)
Overall		Shared	Shared
Planning		IFO/Municipality	IFO/Municipality
Collection	Operations	Municipality	Private Contractor
	Funding	Municipality	Generator
Processing and Marketing	Funding	IFO	IFO
	Operations	Private Contractor and/or Municipality	Private Contractor and/or Municipality

IFO - Industry Funding Organization

FIGURE 4.1
THE SHARED APPROACH



- to bid on the contract to operate the MRF in their area;

- to enter into joint ventures with the IFO to build and operate the MRF;

- to retain the responsibility for processing and marketing all the designated secondary materials they collect.

In the last case, the municipalities would forego any legal right to IFO financial assistance for their MRF's operations. They would, however, be free to negotiate any arrangements they wanted with the IFO if they chose to do so.

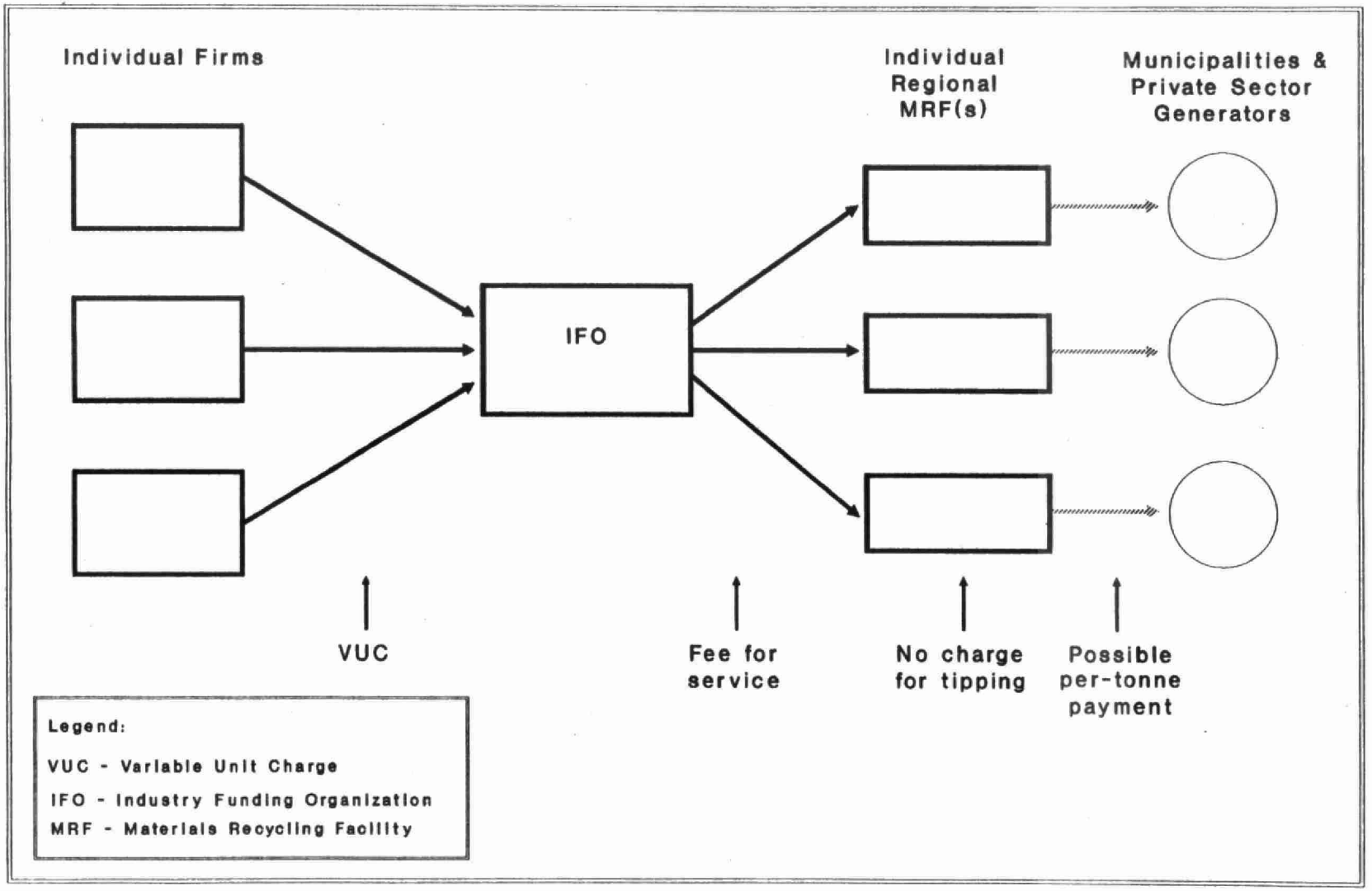
FUNDING ARRANGEMENTS

The financial aspects of the above system are summarized in Figure 4.2. Individual firms would pay a variable unit charge (VUC) to the IFO as a condition of continued membership. The IFO would contract with private or municipal MRFs to do the work of processing and marketing the materials that make up their members' products and packages, in return for a fee. The result of these contracts would be that haulers of designated materials would be able to tip those materials at designated MRFs for no charge, provided that the quality specifications consistent with a yet to be agreed upon standard were met. If the dry recyclable materials failed to meet the specifications, the MRF would either reject the material or charge accordingly. If the MRF were to request greater segregation of the materials at source than the agreed upon standard, negotiations would be required to establish a per-tonne payment from the MRF to the Generator to compensate for the extra collection costs incurred.

The VUC would cover all products and packages covered under the regulation(s), whether reusable, recyclable or disposable. Only the recyclables would go to the MRFs, the goods destined for disposal would continue to go into the garbage until such time as they were redesigned for reuse or recycling, or new markets developed. The intent of the VUC is to encourage the use of more

FIGURE 4.2

OVERVIEW OF THE FLOW OF FUNDING IN THE SHARED APPROACH (DRY STREAM ONLY)



environmentally preferable products and packages, to cover the processing and marketing costs, and to cover the costs for market development and administration.

PRODUCER-SPECIFIC RESPONSIBILITIES

Industry Organizations

The Shared Approach within the Resource Stewardship Model is based on the premise that each Producer would belong to two organizations:

- **the umbrella industry funding organization**, the IFO, through which the Producer would execute the funding and other aspects of the 3Rs obligations that are common to all Producers of designated products and packages;

- **a relevant sector organization (SO)**, through which the Producer would be required to meet the sector-specific aspects of its 3Rs obligations.

The IFO would operate under clear provincial guidelines. The government would want to make sure that all appropriate sectors were represented and that small or newcomer businesses were treated fairly.

Producers would form SOs within their respective industries on a "self-selecting" basis, according to types of products. SOs would be responsible for negotiating source reduction, reuse, and recycling targets with the provincial government for their sectors and would be required to prepare waste reduction work plans on their products and packages.

For example, a large firm that manufactures and/or packages household supplies, foods, cleaning agents, etc. would probably be required to join a number of Sector Organizations, and would be guided by the targets and other requirements negotiated in the various MOU processes. In addition, the firm would fulfil all of its financial responsibilities to the waste and secondary resource management system through its membership in the

province-wide IFO. However, a smaller firm, (one that packages only potato chips, for instance), would only be required to be a member of one SO in addition to the IFO.

Regulatory Requirements

The Shared Approach would require a framework of voluntary but formal agreements supported by regulation to bring all designated Producers into the IFO and to level the playing field. Specifically, WRAC proposes that a "backdrop" regulation (or regulations) be passed that defines the IFO, including parameters for membership, mandate, and structure, and that defines designated products and packages. Also, the regulation(s) should state **either**

a) that designated* brand owners join the IFO, as defined; **or**

b) that designated brand owners have the option of joining or not joining the IFO but, if they chose to not join, then either or both:

   - they would be subject to paying an on-going levy to the government greater than the highest contribution paid into the IFO, or;

   - a prescribed "negative" label would be placed on all their products and packages, accompanied by a publicity campaign.

The intent of the backdrop regulation would be to make IFO- and SO-membership a virtual requirement for doing business in Ontario**. The government would periodically carry out a review of the backdrop regulation mechanism to ensure that the desired goals were being accomplished. Firms not in compliance

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* The regulation(s) defining the products and packages included under the Shared Approach would also be used to identify designated brand owners.

** The backdrop regulation(s) put in place by the government would determine whether membership in these organizations would in fact be a requirement, or whether it would simply be in any organization's best interest to join.

with the regulation at any given time would be subject to prosecution, with the penalties consisting of fines at a level that would constitute a real detriment.

In addition to the two punitive options indicated above for not joining the IFO or an SO, WRAC proposes that the provincial government develop as required a less discretionary alternative fall-back system that could be implemented if the Shared Approach were not adequately established within a specified time frame. Such a system should allow Producers much less opportunity for input into its development and for flexibility of action. This would not only provide further motivation for Producers to participate in the Shared Approach at its outset, but also would reassure municipalities that failure of the Model would not result in their being left with the full responsibility for expanded residential 3Rs systems -- a concern they have expressed.

The government could allow exemptions to the regulation(s) based on criteria contained therein. Exemptions would also be provided to those Producers who implement product stewardship systems for their own products or packages (e.g., deposit systems), as long as these systems satisfy the government's objectives.

Provincial Government-Producer Negotiations

Government-Producer agreements within the Shared Approach would be established as follows:

- through a memorandum of understanding (MOU) negotiated between the IFO and the provincial government;

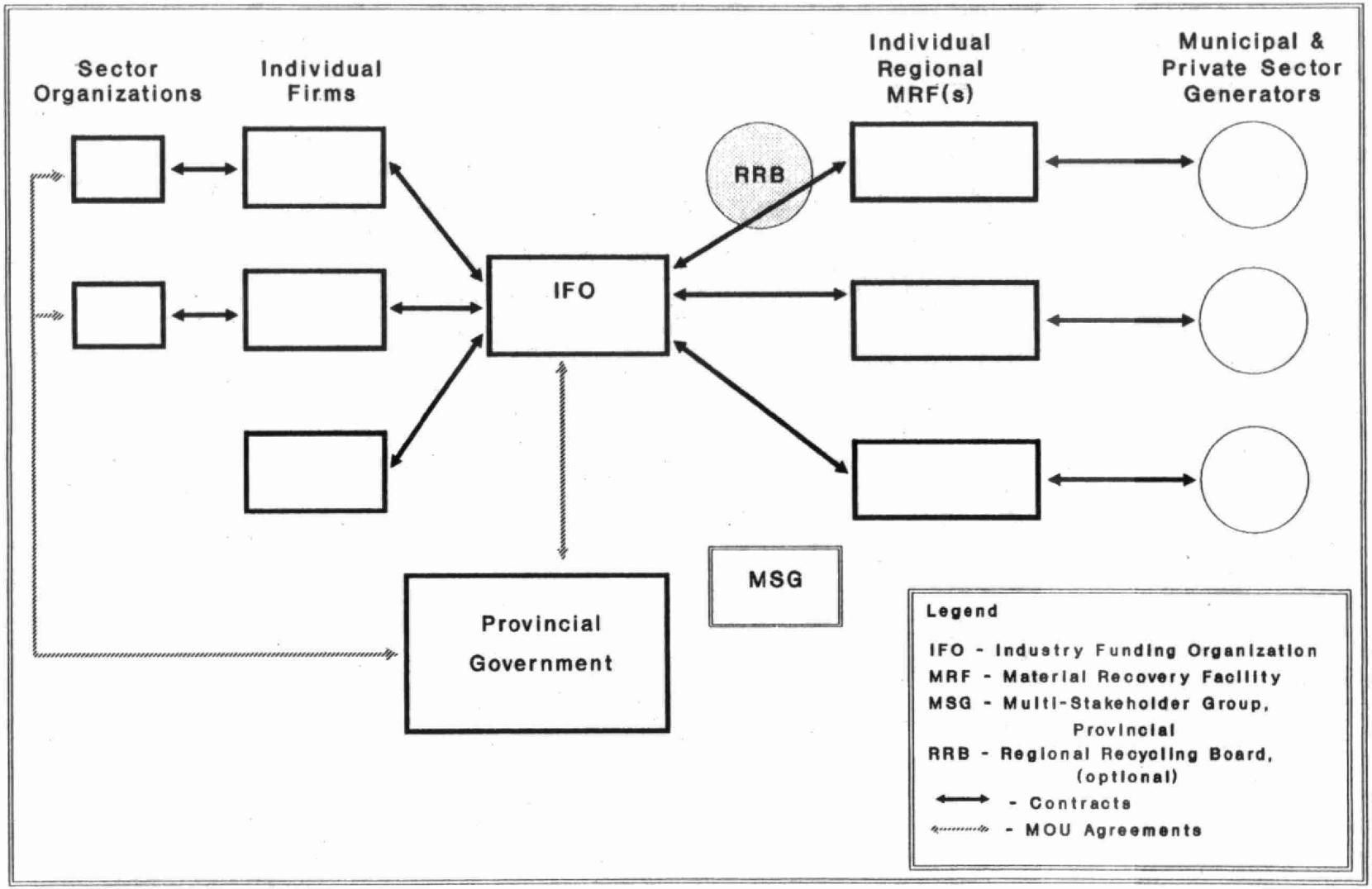
- through separate MOUs negotiated between the SOs and the provincial government;

These negotiations would be time-limited.

(See Figure 4.3 for an illustration of this proposed system.)

FIGURE 4.3

OVERVIEW OF THE CONTRACTUAL OR FORMAL AGREEMENTS IN THE SHARED APPROACH



Provincial-IFO MOU. The MOU to be negotiated between the IFO and the provincial government would set out the "rules of the game", including the following:

- overall targets to ensure accountability in closing the product/package production and recovery "loop";
- guidelines for determining the variable unit charges to be applied to members of the IFO;
- the nature of data monitoring and reporting systems to be developed by the IFO;
- guidelines for conducting negotiations with upper-tier municipalities.

As the intent of the Shared Approach is to allow Producers as much flexibility as possible within the bounds of accountability, WRAC proposes that the MOU be clear in purpose but general in nature. The IFO would be given significant leeway in terms of its structure and methods of operation, provided that agreements with the government had been reached with respect to targets, funding, and monitoring.

Provincial-SO MOUs. The MOUs to be negotiated between the SOs and the provincial government would be more complicated, as they would include specific source reduction, reuse, and recycling targets, and could require environmental profiles or life-cycle analyses (LCAs) to be conducted. As an example, the "widget" sector might agree to overall diversion targets fairly readily, but want to conduct LCAs with respect to the efficacy of source reduction and reuse options for their packaging. The MOU could be developed to include commitments to the results of these analyses, as well as to their completion according to agreed-upon standards and within a specified time frame.

Following the MOU discussions, comment would be solicited from other stakeholders, including municipalities and public interest groups, to ensure agreements reflected their concerns. This process would also be time-limited.

Facilitating Agency. To assist in the negotiation process, WRAC proposes that a provincially mandated multi-stakeholder group (MSG) be empowered to conduct time-limited reviews of the agreements as they are negotiated. Such a body could also monitor progress towards targets and recommend remedial action to the Minister of the Environment if required. It is not proposed that this group have the power to intervene in negotiations. Regarding any unresolved matters needing further adjudication, WRAC proposes that these be referred by the Minister to a quasi-judicial agency such as the Ontario Municipal Board.

Pace of Negotiations. WRAC expects that the IFO MOU would be much more quickly negotiated than the SO MOUs*. However, since the two processes would, for all intents and purposes, be independent of each other, this time differential should not pose a problem. The IFO could be up and running, MRFs could be built and operating, and overall waste diversion could be substantially increased over current levels -- all without the benefit of sector-specific MOUs. In fact, all parties might find the negotiating of sector-specific MOUs easier, once the economics of waste management have been favourably altered by the internalization of recycling costs by Producers.

Municipal Government-IFO Agreements. WRAC expects that the Shared Approach is flexible enough to allow for its application province-wide. The negotiations proposed between the IFO and upper-tier municipalities would be the vehicle for determining and resolving regional differences. The agreements to be negotiated between the IFO and upper-tier municipalities would cover matters such as the following:

- the location, ownership, and management of the MRFs;

- the types of collection systems to be used (e.g., depots in rural areas, higher degrees of source separation) and the relevant cost differentials;

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* The setting-up of the IFO first would allow the monies so badly needed for recycling programs to flow immediately to those programs, thereby reducing the need for an interim strategy of assistance to municipalities.

- the quality considerations for materials to be delivered to the MRFs.

Upper-tier municipalities might wish to establish their own multi-stakeholder regional recycling boards for planning and monitoring on-going operations. These committees could have both IFO and municipal representation and be the forum for initial and on-going municipal-IFO negotiations.

Monitoring Progress and Accountability

The accountability of all parties must be monitored. Both the IFO and the various SOs would be required to provide data* for the monitoring of progress towards the targets set out in their respective MOUs.

In the event a sector was unable to meet the targets set out in its MOU, and a new MOU could not be negotiated, the sector would enter into a consultative process with the government which would result in the enactment of specific regulations designed to achieve the goals that were not achieved through voluntary action.

The intent of including this fall-back provision in the Shared Approach is to acknowledge the efforts and financial contributions of those sectors that adopt the voluntary approach. Failure of the voluntary system to achieve the 3Rs targets set out in an SO MOU would not result in the firms in that sector automatically becoming subject to the restrictive back-drop regulation(s) or the alternative regulatory system described earlier. Failure to meet the targets (while continuing to meet financial obligations) would be interpreted as a failure of the voluntary, highly autonomous system set out in the MOU to achieve its own goals, but not as a failure of the sector in its responsibility to finance the 3Rs system. The regulations resulting from the consultation would be designed to assist that sector in reaching its goals; they would not be unilateral or

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* These data would be appropriately protected for confidentiality.

insensitive to that sector's participation in the marketplace. Through this mechanism, the legitimate efforts and the financial contributions of the sector would be recognized, without sacrificing accountability to society's overall waste reduction goals. If, at any time, a firm reneges on its financial obligations, the backdrop regulation(s) would come into effect.

Agreements Between IFO, SOs, and Member Firms

All firms joining the IFO would be required to agree to the following major commitments:

- payment to the IFO of an administration fee based on the firm's degree of contribution to the waste stream, as reflected by gross sales, volume of product, or some other such easily measurable figure;

- payment to the IFO of a VUC on each product and package set at a level that reflects the relative waste management impacts within the system.

Similarly, when a firm joined its SO, it would be required to meet the following conditions:

- the production of a Waste Reduction Workplan on designated products and packages (to be kept on file by the firm) that addresses the firm's means of achieving its share of the 3Rs targets set out in the SO-Government MOU;

- the implementation of the Workplan and the achievement of the targets set out therein within the time frame established in the SO-Government MOU;

- the provision of data to the SO regarding the firm's waste reduction efforts;

- the execution of any other specific actions to be taken by the firm as negotiated by the SO with the government as part of the MOU.

Implementation

The implementation process for Producers within the Shared Approach is shown in Figure 4.4. Regarding its timing, WRAC recommends:

- that the Ministry of the Environment undertake to have a backdrop regulation promulgated **by the end of 1993** that makes membership for Producers in a prescribed Industry Funding Organization and prescribed Sector Organizations virtually a requirement of doing business in Ontario;

- that the Ministry negotiate a Memorandum of Understanding with the IFO as soon after its formation as possible, and within a specified time frame;

- that the Ministry begin its negotiations with the SOs at the same time as its negotiation with the IFO, and that the Memorandums of Understanding with the SOs also be finalized within a specified time frame.

GENERATOR-SPECIFIC RESPONSIBILITIES

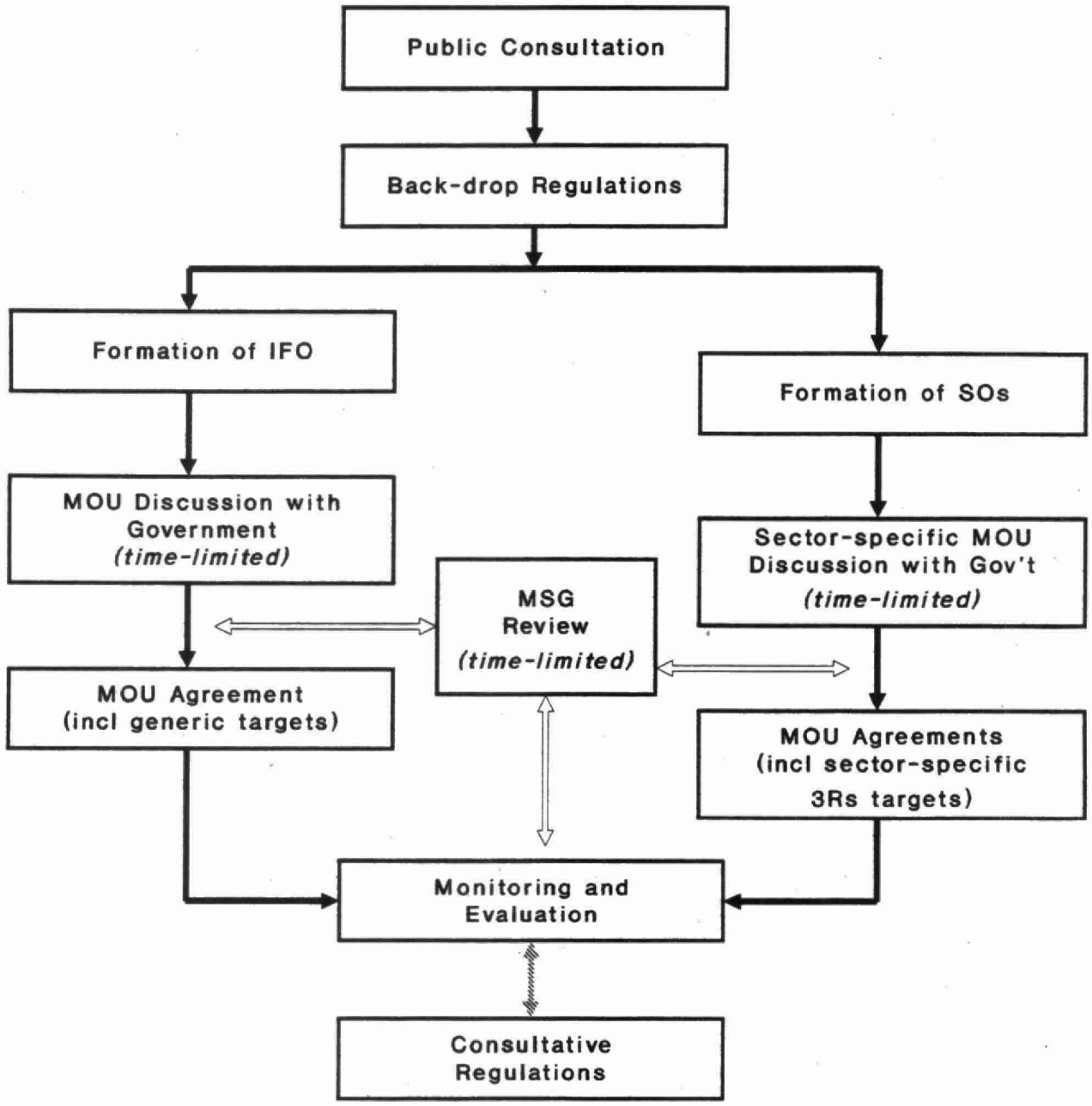
In WRAC's view, two types of mechanisms are required to further shift the behaviour of Generators and their agents away from waste generation and disposal to waste reduction activities, and to ensure that their responsibilities are carried out in an effective manner. These are:

- economic measures, or more specifically, variable user fees (VUFs)

- direct regulatory measures.

It is proposed that municipalities implement VUFs for two principal reasons. For one, these fees would provide direct funds for municipalities to cover their collection costs for secondary resources and wastes. VUFs would also provide a strong incentive for effecting the behavioural changes necessary at the Generator level to entrench source reduction and reuse as

FIGURE 4.4
IMPLEMENTATION OF SHARED APPROACH FOR PRODUCERS



priorities over recycling and composting, and all of these options as more desirable than disposal. (The requirements for implementing VUFs and other relevant information on these funding mechanisms can be found in Section 3 of this report. Specific WRAC recommendations are contained in Appendix C).

The proposed regulatory approach is intended to ensure that the necessary infrastructure is put in place, both at the point of generation and at the collection level, in order to facilitate the participation of Generators in new programs. Requirements for expanding the existing infrastructure to recover designated materials would include mandatory source separation of these materials from both municipal and IC&I sources. Requirements for increasing 3Rs activities amongst IC&I Generators would include the undertaking of waste audits and waste reduction workplans. These regulations are, in fact, currently being finalized by the Ministry of the Environment and will soon be released. However, amendments would be necessary under the Shared Approach to cover all the designated materials. In addition, new regulations may be required.

The need for further regulations affecting Generators and their agents could become apparent through the MOU negotiations between the Ministry and Producers and any later consultative regulation discussions between the two parties. For example, Producers may be unable to achieve their 3Rs targets due to circumstances beyond their control (e.g., an unregulated action of Generators). Consideration should also continue to be given to the possible banning of designated materials from landfill sites across the province. Bans have proven to be fairly successful measures for encouraging the recycling and reuse of secondary resources.

Extensive and thorough consultation with the municipal and IC&I generating sectors would occur prior to the development of any new regulation on their sectors. Generators would also participate through the proposed multi-stakeholder review of the MOU negotiations between Producers and the government, and any subsequent development of regulations for Producers as a result of their inability to achieve their 3Rs targets.

The implementation sequence for Generators under the Shared Approach is shown in Figure 4.5.

APPLICATION TO IC&I DRY WASTE STREAM

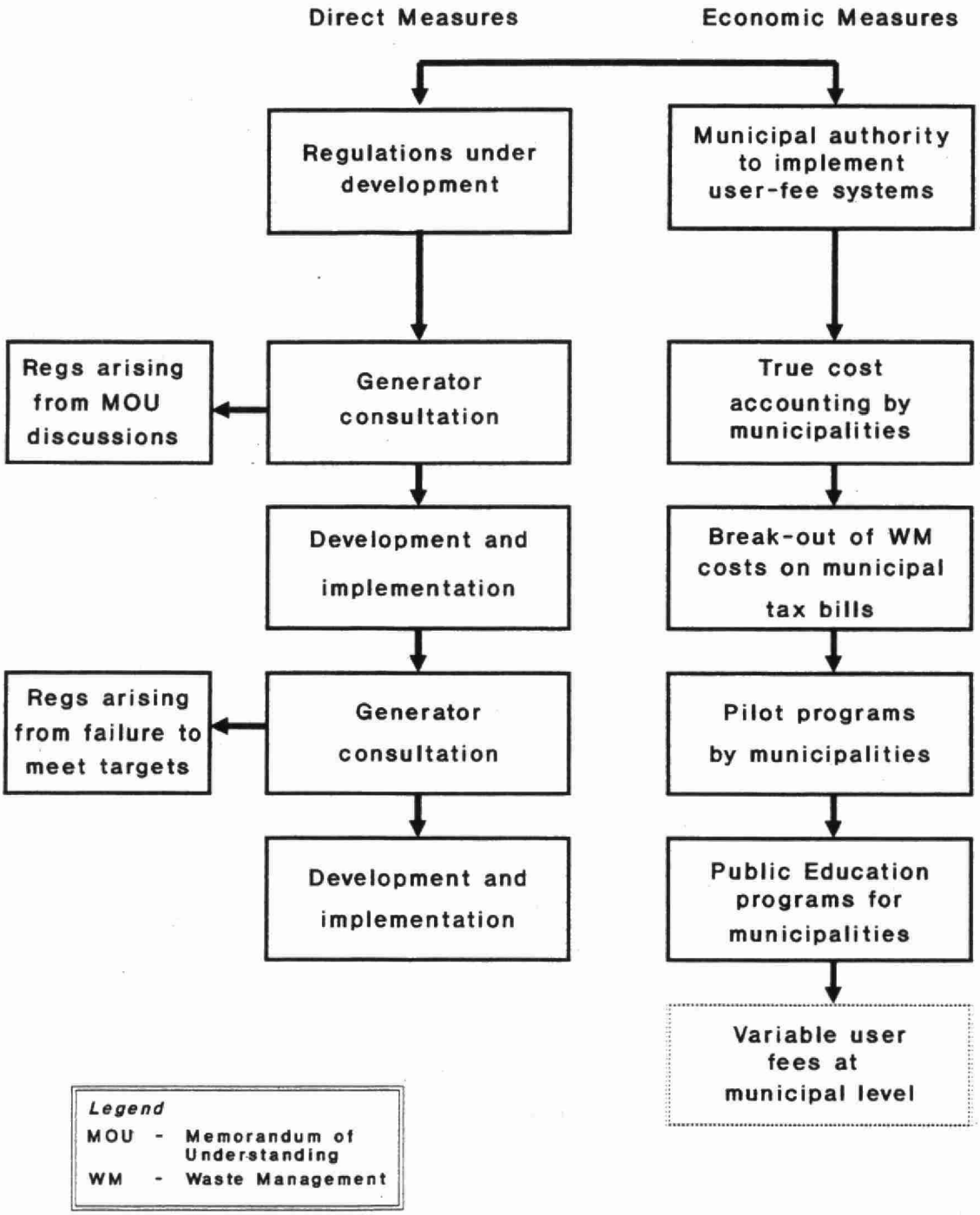
WRAC believes that the Shared Approach would apply to most of the same products and packages generated by the IC&I sector as are generated at the residential level. This would include food and beverage containers, and other consumables, such as newspapers, magazines, and telephone books.

However, there is a "grey" area regarding many products and packages (e.g., old corrugated cardboard (OCC) and other paper products). Many of these materials come from offshore and in large quantities, making it difficult and unfair to hold Ontario Producers responsible for them. For example, much of the OCC in Ontario comes from the far East, arriving in the form of shipping cartons for such products as electronic equipment, and much of this material is not recyclable. Furthermore, the importers/ distributors/retailers are often also the Generators (e.g., distributors and retailers importing electronic equipment contained in corrugated cartons are commonly left with the management of the OCC).

Little would be gained by including such materials in the Shared Approach. The simpler Generator Approach (Section 5) should suffice and it would permit large-scale Generators, who have some "clout" with their overseas suppliers, to influence them regarding the recyclability of their packages. WRAC therefore recommends that the Ministry of the Environment further refine this "grey" area pertaining to certain products and packages, and that the backdrop regulation(s) be used to define precisely what is included and what is excluded under the Shared Approach for IC&I Generators. It should also be noted that the Shared Approach would not apply to solid wastes generated in the production process of a factory (e.g., foundry sands).

Given a clear definition of what is in and what is out, IC&I Generators would then be able to segregate those products and packages designated under the regulation(s) as being part of the

FIGURE 4.5
IMPLEMENTATION OF SHARED APPROACH FOR GENERATORS



Shared Approach in order to minimize their costs. Source-separated IC&I "Shared Approach materials" would be tipped by private haulers for no charge at designated MRFs as long as quality specifications were met. In other words, the same rules would apply to private Generators as to municipalities for these specified materials.

As an example: A hospital could source-separate its Shared Approach materials, and if they met the specifications, only be responsible for the cost of conveying those materials to the tipping floor of the MRF. From that point on, processing and marketing costs would be picked up by the Producers of those products and packages through the IFO. All of the hospital's other dry recyclable wastes, however, would be open to negotiation as to whether it would be received by the MRF and, if so, at what price.

WRAC feels that the approach proposed for IC&I dry wastes and secondary resources (i.e., their allocation between the Shared and Generator Approaches according to primary source of origin) would be fair and efficient. Producers would have more direct control over the flow of materials necessary to achieve the targets negotiated as part of the MOU process. IC&I Generators would not be held responsible for the processing costs of materials for which they were not making purchasing decisions (i.e., the consumables purchased by individuals while on the job).

In summary, all recyclable IC&I materials would be caught by either the Shared Approach or the Generator Approach, and diversion from this sector would be optimized.

Section 5

THE GENERATOR APPROACH FOR RESIDENTIAL AND IC&I WET WASTES AND DRY PROCESS WASTES

INTRODUCTION

The organic materials covered by the Generator Approach consist primarily of food and yard wastes, which together comprise approximately 20 per cent, by weight, of the province's total waste stream. Although WRAC has not discussed in detail the application of the Generator Approach to IC&I dry process wastes, the Committee feels that the types of actions proposed for wet materials could, with some modifications, also apply to these materials. (The following discussion therefore applies in general to all IC&I dry wastes not covered by the Shared Approach described in Section 4.)

ROLES AND RESPONSIBILITIES

WRAC believes that the responsibility for managing organic, or wet, wastes lies primarily with the Generators of these materials, as the Producers of such materials are either hard to identify (e.g., for leaf and yard waste) or have little control over the development of markets for the composted materials (e.g., farmers). For individual household Generators, the responsibility would be passed on to the municipality, but only with the acceptance by the Generator of the direct financial burden (i.e., through a user-fee system). The IC&I sector would be organized similarly, with private haulers and other waste management firms performing the role of the municipality (i.e., as agents for the actual Generators).

This approach for wet waste management is spelled out in detail in WRAC's report entitled "An Action Plan for Managing Organic Wastes in Ontario", which is attached to this document as Appendix E. As summarized therein, and illustrated in Table 5.1, the general roles and responsibilities of concerned parties would be as follows:

TABLE 5.1

SUMMARY OF ROLES AND RESPONSIBILITIES SPECIFIC TO GENERATORS

RESPONSIBILITY		WASTE STREAM	
		Wet Residential	Wet and Dry IC&I (non-designated)
Overall		Individual Generator and Municipality	Private Generator
Planning		Municipality	Market Forces
Collection	Operations	Municipality	Private Contractor
	Funding	Municipality	Generator
Marketing and Processing	Operations	Private Contractor and/or Municipality	Private Contractor and/or Municipality
	Funding	Municipality	Generator

- The Province would develop policies; regulate programs (set standards with clear, consistent rules); provide some measure of funding; approve facilities; police compliance; undertake educational programs.

- Municipalities would continue, as in the past, to fund, build, and operate facilities; to undertake educational programs.

- The private sector would also play a role to fund, build, and operate facilities; to undertake educational programs.

- Generators would reduce, reuse, and recycle wastes, and be given the opportunity to take part in public siting and approvals discussions.

Adoption of the Resource Stewardship Model for wet materials would result in organic materials ending up in a variety of end uses, with some material going to centralized composting facilities. These facilities would be built, owned, and operated by municipalities for the residential stream, and/or firms in the private sector for the IC&I stream. Municipalities would only be responsible for handling residential wet wastes, but would be free to compete for materials from IC&I sources if they so desired. Where appropriate, joint ventures could be organized between municipalities and private sector proponents.

FUNDING ARRANGEMENTS

WRAC believes that the Province should not be involved in the funding of organic waste management development beyond providing seed money for demonstration composting facilities and pilot projects, although funding for backyard composters and their demonstration projects should continue. As for municipal funding demands, both capital and operating, they should be met by the municipalities themselves, not from general revenues, but through user fees, as follows:

- Operating costs could be managed through an ongoing user-fee system. All Generators would be charged a fee to tip their

organic materials at a composting facility, the fee to be calculated on a true-cost accounting basis.

- Capital costs could be appropriated by creating reserve funds built up over time from user fees, tipping fee surcharges, or other levies connected with the collection and disposal of wastes within their jurisdictions.

Municipalities would vary in their capability to raise money for reserve funds. Many northern communities, for example, do not levy tipping fees. In the north, centralized composting facilities will not generally be required, however, because of the greater amount of land available for other uses of wet wastes (e.g., direct land application, mine tailings reclamation).

As for private facilities, the capital costs would be funded by investors, while their operating costs, again, would be managed through on-going user-pay systems.

IMPLEMENTATION

General Strategy

The key to ensuring that the necessary investment in processing facilities for wet wastes take place would be **the banning from landfill of all organics in southern Ontario by 1998.** This would require that an infrastructure be put in place to handle the wastes before that date to ensure that there is no threat to public health and safety. The ban would be supported by the following measures:

- the phasing out of provincial subsidies for municipal wet waste management programs (excluding backyard composting) by 1996;

- the requirement that municipalities phase in user-fee programs, specifically variable user fees, for wet waste by 1996;

- targets for numbers of backyard composters;

- mandatory source separation of wet wastes by 1996.

Taken together, these measures would provide Ontario with an effective program for managing organic wastes and helping achieve the provincial waste reduction goal. Municipalities would be responsible for treating the wet wastes they now collect from residential and other sources. IC&I Generators would be responsible for their own organic wastes, with the facilities for handling and processing those wastes to be provided through market forces.

An argument that has been raised against the private control of IC&I organic wastes relates to the question: "What would happen to the wet materials should a private facility go out of business?" With a landfill ban on organics in place and with its own treatment facilities operating at full capacity, a municipality would be unable to accept this material and would be under no obligation to do so. Such an eventuality, however, would be handled by market forces: the material would be long-hauled to an outside facility until either the public or the private sector recognized the opportunities involved and put another facility into place locally, or increased the size of an existing facility. Private Generators would be obliged to continue to pay for the disposition of their organic wastes.

Support Measures

In the attached Action Plan for organic wastes, WRAC has already recommended a variety of support measures to the Ministry of the Environment for implementing what has now become the Generator Approach for residential and IC&I wet wastes. These measures fall into the following five categories:

- **administrative and approvals procedures**, regarding the need for material handling and treatment guidelines and the quick adoption of a permit-by-rule approach for approving centralized composting facilities;

- **education and communications**, with emphasis upon the provincial government undertaking a wide-based education and communications program to increase awareness of the need for separating wet wastes from garbage;

- **funding and financial incentives**, for research and development programs involving composting demonstration projects and the use of organic materials on agricultural lands;

- **technological development**, with emphasis on the role that the federal government should play (because of its control over the granting of patents and product licences) in funding new material processing technologies and uses;

- **promotion and marketing**, with stress on developing optimal uses for the large quantities of compost that will result from the implementation of widespread wet-waste recovery programs.

Adoption of these measures would greatly aid the development and implementation of the Generator Approach for residential and IC&I wet wastes in Ontario.

Section 6

CONCLUSIONS

The Waste Reduction Advisory Committee believes that the Resource Stewardship Model proposed in this document would strongly promote the conservation of land and resources, and would do so in a cost-effective and efficient manner.

WRAC also believes that the Model's framework provides for a fair and reasonable balance of responsibilities for waste reduction between sectors. And, in assigning responsibilities, the Model ensures that no sector is held accountable for any aspect of its activities without being given a commensurate degree of control over the manner by which it carries out its responsibilities. This, and other important resource stewardship principles, such as promoting the 3Rs hierarchy, levelling the playing field, and paying through direct rather than indirect means, have all been addressed by the Model. Implementation of the recommendations contained herein would, in WRAC's view, help significantly to solve Ontario's current and serious solid waste management problems and also catalyze a substantial expansion of our waste reduction and secondary resource programs. This, WRAC believes, would occur in a practical and realistic manner.

By making not only those who generate wastes but also those who produce goods bear some ongoing responsibility for the 3Rs, the Ontario government would bring Producers into the stewardship fold. To the best of WRAC's knowledge, this would be a "first" in North America. The well-known German Green Dot product stewardship program is reviewed in Appendix F.

By practising product stewardship as proposed under the Shared Approach, Producers would have an incentive to avoid restrictive regulations by achieving 3Rs targets through voluntary means. They would also have an incentive to reduce their costs, which eventually would result in increased competitiveness in an increasingly environmentally conscious world marketplace. New markets for secondary materials would be developed, and existing

ones expanded, so that over time the total costs of our secondary resource and waste management systems would be considerably decreased.

Generators under the Model would be provided with increased opportunities by which to practise waste reduction activities, thereby facilitating their participation and expanding these activities. Their agents would have an incentive to divert waste from landfill and to reduce associated costs. Real savings would be realized as landfill costs rise and collection systems for recyclables improve. Under the Shared Approach, municipalities would also be sheltered from fluctuating prices for dry secondary materials.

With the application of user-pay systems, at both the Producer and the Generator levels, an equitable and sustainable financial system for the 3Rs would be put in place. Through variable rates, with disposal costing the most and reuse the least, behaviour would be changed, and secondary resource and waste management systems improved. The 3Rs hierarchy would become entrenched in the economic decision-making processes of all those who can effect the greatest change.

Another important attribute of the proposed Model is the flexibility that it offers. Producers would be allowed flexibility through the negotiated compliance approach: as long as they pay their share and meet the 3Rs targets, they would have considerable freedom to avoid regulation and to develop new products and innovative technologies. Generators, on the other hand, through their agents, would have the freedom to participate in running their own MRFs. The model is sensitive to the different circumstances in various regions of the province. The negotiation process proposed between upper-tier municipalities and the IFO would respond to the varying needs of northern and southern regions, and urban and rural municipalities. Through such opportunities in the Model's implementation process, fairness and efficiency are enhanced.

Overall, the Resource Stewardship Model represents a bridge from the generally inadequate and poorly funded secondary resource and

waste management programs of today to an integrated, sustainable 3Rs system for the future. All relevant parties would be involved, not only equitably but also efficiently within its comprehensive operational framework. WRAC believes that the Resource Stewardship Model represents Ontario's best hope for reaching its minimum 50 per cent waste-diversion goal by the year 2000, and doing so in the spirit of broad-based co-operation that has been building over the years.

APPENDICES

Appendix A

WRAC's MANDATE, ORGANIZATION, AND MEMBERSHIP

ORDER IN COUNCIL DIRECTIVES

The Waste Reduction Advisory Committee was established by Order in Council 1957-90. Its mandate is to provide independent policy advice to the Minister of the Environment on the reduction, reuse, recycling, and composting of residential, commercial, institutional, and industrial non-hazardous solid waste and household hazardous waste across Ontario.

Specifically, WRAC's Order in Council spells out the following tasks:

- setting specific interim targets for waste diversion in order to achieve the Ministry's waste diversion goals of 25 per cent diversion from landfill by 1992 and 50 per cent diversion by 2000;

- deriving the means of measuring, monitoring, and revising the waste diversion targets;

- assessing progress made towards achieving the targets;

- identifying future industrial sectors to participate in industry-sponsored funding organizations;

- evaluating the progress made by these organizations towards achieving their waste management goals;

- advising on any activity that may increase reduction, reuse, recycling, and composting, including incentives, educational measures, public relations, advertising and promotion, research, and market development;

- advising on any other matter referred to WRAC by the Minister;

- monitoring recycling rates and refillable ratios for soft drink containers, as required by Ontario Regulations 622/85 and 623/85.

STRUCTURE AND ORGANIZATION

Membership

WRAC is a multi-stakeholder group consisting of 20 members with special interests and expertise related to the 3Rs. They are drawn from environmental groups, municipalities, recycling program operations, and industry. Committee appointments range from one-to-three-year terms. Three of WRAC's members, including the Chairperson, J. Wendy Cook, were members of WRAC's predecessor, the Recycling Advisory Committee. Ms. Cook was also chairperson of RAC from May 1987 to August 1990.

Support Services

WRAC maintains an office in Toronto and is supported by a full-time three-person staff, including Glenn Munroe, Manager, Anne Masterton, Administrative Secretary, and Tina Giovinazzo, Research Assistant. Because of its small staff, WRAC also retains a variety of consultants to provide necessary support services.

Sub-Committees and Task Groups

Over its first two years WRAC was supported in its work by seven sub-committees reporting directly to WRAC and nine task groups reporting to the sub-committees. The sub-committees and their task groups have been as follows:

- Strategic Planning Sub-Committee
  - Road Map Task Group
- Composting Sub-Committee
  - Composting Advisory Forum
- Communications/Education Sub-Committee

- Reduction/Reuse Sub-Committee

- Target Management Sub-Committee

- Recycling Sub-Committee
  - Waste Paper Task Group
  - Glass Task Group
  - Household Hazardous Waste Task Group
  - Plastics Task Group
  - Optimizing Recovery Task Group
  - Construction/Demolition Task Group

- Packaging Sub-Committee
  - Life Cycle Analysis Task Group

Members of sub-committees and task groups are drawn from relevant external organizations and other government bodies as well as from WRAC itself. Each sub-committee must include at least two WRAC members, one of whom must be the chairperson.

WRAC MEMBERSHIP AS OF LAST WRAC MEETING (August 27, 1992)*

J. Wendy Cook, Chair

Tom Klein Beernink	Ontario Environment Network
David Birkby	Plax Incorporated
Duncan Bury	Region of Ottawa-Carleton
Nancy Crawford	Ontario Waste Management Association
Bruce Cook	Laidlaw Waste Systems Ltd.
Gwen Discepolo	Halton's Recycled Resources Ltd.
Bob Flemington	OMMRI: Corporations in Support of Recycling
John Hanson	Recycling Council of Ontario
Maureen Shaughnessy Kitts	McDonald's Restaurants of Canada Limited
Brian McClay	Canadian Pulp & Paper Association
Alasdair McKichan	Retail Council of Canada
Frank O'Hagan	Alderman, City of North Bay
Jack Rosen	Rosen Industries
Ellen Schwartzel	Pollution Probe Foundation
Paul Taylor	Compost Management

FORMER CONTRIBUTING WRAC MEMBERS

Michael Bloomfield	Harmony Foundation
Dick Buggeln	Formerly Regional Municipality of Waterloo
Cathy Cirko	Formerly Resource Integration Systems/Proctor & Redfern Ltd.
David McRobert	Formerly Pollution Probe Foundation
Janet Mitchell	Formerly Councillor, Halton Region
Bob Nelson	Atlantic Packaging Products Ltd.
Eileen Smith	Formerly Councillor, Town of Simcoe
Peter Wong	Formerly Mayor, City of Sudbury

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* As of the last meeting, four vacancies existed on the Committee; one to be filled by a labour representative, one by an environmentalist, the other two by municipal representatives.

WRAC'S PLANNING PRINCIPLES

WRAC believes that certain planning principles must govern the decision-making process regarding waste reduction and resource management in Ontario. With these principles clearly defined, the "rules of the game" can be better established, and all sectors will be better able to understand their roles and responsibilities. The practice of "resource stewardship" should, through these planning principles, be woven into the very fabric of society, for only when this occurs will Ontario be able to effect the necessary changes to protect the earth's resources in a truly sustainable way.

In defining the rules, it is important to recognize that exceptions may be encountered, as Ontario moves through its planning process. Some further refinements of the principles or other tools may be necessary to resolve such matters as they arise.

WRAC developed the seven planning principles that follow in late 1990 to help guide development of both the Shared Model and a long-term waste reduction plan for Ontario.

1. A FAIR AND REASONABLE APPROACH

All steps taken to achieve the objectives should, on one hand, be fair and reasonable for all sectors. On the other hand, no business, individual, or institution should avoid its share of responsibility.

2. VOLUNTARY VERSUS MANDATORY ACTION

Voluntary co-operation between governments and the private sector is preferred if matched with the responsible participation of companies and truly realistic waste reduction opportunities.

Regulations and other firm actions should be applied only when necessary to ensure that the objectives are achieved.

3. THE 3RS HIERARCHY

The hierarchy of source reduction, reuse, and recycling is endorsed and, normally, priority will be given to promoting this hierarchy. However, in some situations, it may be environmentally better to promote recycling to conserve resources rather than to promote source reduction.

4. DIRECT/INDIRECT PAYMENT

Direct payment for costs associated with 3Rs programs is preferable to indirect payment. No sector should, however, be required to pay for actions over which they have no effective control.

5. RESPONSIBILITY/AUTHORITY LINKAGE

No sector should be held responsible for any component of Ontario's 3Rs program without being given the authority to effectively control the manner in which it fulfils its responsibilities. Each sector that is responsible for participating in new programs should be empowered to guide its waste reduction and recycling actions.

6. A LEVEL PLAYING FIELD

The rules must treat equally all those affected: domestic and foreign products and services; small and large companies; individuals in all areas of the province; each and every one who holds some responsibility for making waste.

7. EASE OF IMPLEMENTATION

As speed is of the essence, consideration should be given to choosing options that can be readily implemented. Any options chosen, however, must be consistent with the other planning principles outlined and in keeping with long-term objectives.

WRAC POSITION PAPER: VARIABLE USER FEES FOR RESIDENTIAL SECONDARY RESOURCE AND WASTE MANAGEMENT SERVICES IN ONTARIO

INTRODUCTION

This Position Paper summarizes the investigations of the Waste Reduction Advisory Committee (WRAC) regarding the role of user-pay fees in residential secondary resource and waste management programs. Formed in mid-1990, WRAC is a multi-stakeholder body, providing independent advice to the Ontario Minister of the Environment on the reduction, reuse, recycling, and composting of residential, commercial, institutional, and industrial non-hazardous solid waste and household hazardous waste in Ontario.

WRAC's study of user fees was conducted by the User Pay Task Group of its Strategic Planning Sub-Committee. The Task Group, in turn, was assisted by commissioned research undertaken by Proctor & Redfern Limited and summarized in their discussion paper "Charging for Residential Resource and Waste Management Services".

WRAC presents this Position Paper as its considered opinion on the use of user fees for residential secondary resource and waste management programs in Ontario.

THE CURRENT SITUATION

Residential secondary resource and waste management services are primarily financed in Ontario by the following mechanisms:

- property taxes;

- tipping fees;

- levies charged by municipalities providing disposal services to other municipalities;

- provincial grants and subsidies;

- recyclable material revenues.

Of these approaches, however, disposal tipping fees and property taxes provide a greater proportion of the funds required than inter-municipal levies, provincial grants, and material revenues. There are a number of drawbacks to a financial support system based on the current arrangement.

In most municipalities, the majority of waste management costs are recovered through disposal tipping fees paid by industrial, commercial, and institutional (IC&I) generators. As such, these generators are subsidizing the typical householder's collection, processing and disposal costs. This inequity is also evident in provincial grants and subsidies, which are based on percentages of capital and operating costs of secondary resource and waste management systems.

Recovery of secondary resource and waste management costs through property taxes or from IC&I generators results in an indirect method of payment for the service. Householders experience no direct effect or impact from their use or overuse of the waste management system. As such, there is no incentive to encourage responsible and appropriate use of secondary resource and waste management alternatives.

TOWARDS USER FEES

A system that would address the issue of equitable payment and provide direct feedback on the overuse or abuse of the service would involve a user-fee program by which householders are charged directly on a true-cost accounting basis for the wastes and recyclables they place at curbside for pick-up. Its primary purpose would be as follows:

- to encourage householders to reduce waste generation through improved reduction, reuse, recycling, and composting practices;

- to recover the true costs of residential secondary resource and waste management services from those benefitting from the service.

Various municipalities in both Ontario and the United States have expressed interest in curbside user fee programs for residential waste collection. Such programs represent a fairer approach for this service, as householders pay user fees for only the products and packaging they actually dispose of. The Waste Reduction Advisory Committee has concluded that user fees constitute the most appropriate mechanism for financing not only residential waste management services but also residential secondary resource management services as well.

As use of alternative methods of waste management, such as source reduction, reuse, recycling, and composting, must be encouraged whenever possible, WRAC acknowledges the need for economic incentives to encourage societal change. While true costs for each system should be considered in determining the appropriate user fees, WRAC recognizes that user fees for residential waste management must be higher than user fees for secondary resource management. As such, a variable user fee system for residential secondary resource and waste management services is recommended.

WRAC recognizes that wide implementation of user fees for residential waste management services would require certain changes to existing policies and practices. However, WRAC believes that such an approach is essential to the satisfactory development of a more sustainable system and the achievement of Ontario's 50% waste diversion goal by 2000.

USER FEE APPROACHES FOR RESIDENTIAL PROGRAMS

Many Ontario municipalities successfully employ user fees for transportation services and water use, as well as for tipping wastes at disposal facilities. Only recently have some Ontario

and other Canadian municipalities instituted or begun to study user-fee programs for residential waste collection at curbside. In the United States, on the other hand, several cities have been employing user-fee programs for curbside collection for some time, in certain cases for more than 20 years.

Residential Curbside User Fees

Curbside user fees are based on the quantity of waste generated for collection and disposal based on either volume or weight.

Various volume-based systems have been attempted, including those based on the following approaches:

- **Coded bags.** Householders put out waste in special bags bought from the municipality.

- **Coded tags.** Householders put out waste in bags bearing tags bought from the municipality.

- **Container rates.** Householders pay a fee for each garbage container set out. May vary according to volume or number of containers.

- **Container rental.** Householders rent a container from the waste hauler and are limited to the quantity of waste that will fit into it.

- **Container licence.** Householders purchase an annual licence for each container to be set out, the fee varying according to container size.

Weight-based systems, while less common, eliminate the tendency of many householders to overstuff bags and containers when costs are determined by volume. In addition, paying on the basis of weight may encourage householders to compost food wastes, particularly because of their weight when wet, and to buy lighter

products and packaging. Weight-based user fees are also in direct keeping with Ontario's weight-based waste diversion targets.

However, weight-based systems require more specialized equipment. They may also require increased staff and additional collection time for the weighing of materials, as well as a back-up strategy in case of system failure. Householders may also question the accuracy of the weigh scales used to determine their billings.

Disposal Facility User Fees

Disposal facility user fees for residential generators are generally charged according to one of the following methods:

- **Per-visit.** Charged by the item or on a volume basis (e.g., by the bag) at a transfer station or landfill site. May vary for materials requiring special handling and/or processing.

- **Annual.** Unlimited access allowed to landfill site. May vary according to type of waste. Can be used to restrict disposal to locally generated wastes.

While relatively common at rural landfills or at urban transfer stations, this type of user fee does not provide an opportunity to recover costs where collection is provided by the municipality or by a private company rather than by the generator directly.

ADVANTAGES/DISADVANTAGES OF USER FEES

The primary advantages of user fees are as follows:

- The opportunity for explicit and direct communication with the user of a service.

  The information contained in a billing system or exchanged during the purchase of a service, together with the financial impact, serve to increase public awareness and appreciation for the utility being used.

- Increased awareness and appreciation, which leads to more conscientious use of the service.

  For example, water-metering programs in Canada have typically resulted in significantly reduced water consumption. Curbside pay-by-the-bag waste collection programs in the United States have generally resulted in reduced waste generation and increased recycling activity.

- Improved planning for municipal services due to better and more detailed information about the use of public services based on public demand.

The primary disadvantages associated with user fees are as follows:

- Potential inequity among users of services.

  Implementing user fees for services that have been historically provided without charge to all members of the community raises the question of equal access to public services and the ability of some members of the community to pay. By recovering the cost of a service through the general levy as is now the case, use of the service by some members of the community is subsidized. In recovering the cost directly through user fees, certain residents with low or fixed incomes may be unable to pay for the service.

  However, social service systems do exist within municipalities, for other basic services and needs, to address the issue of ability to pay by members of the community. User-fee systems for waste management can be incorporated into needs assessments in a manner similar to utility costs.

- Illegal dumping to avoid payment of user fees.

  Experience suggests that illegal dumping may result from the implementation of user-fee systems as it has from increased tip fees and material bans at landfill. Access to

comprehensive recycling services, public education, and monitoring immediately after implementation generally address this problem.

- Public perception of user fees as an extra tax for a service that has been provided "free".

  Recovery of costs through the general levy has resulted in the public perception that waste collection and disposal is provided as a free service by the municipality. When direct user fees are implemented, a common concern is double payment, indirectly through property taxes and directly through user fees. Public education and consultation together with more detailed and informative methods of communicating costs may address this concern.

- Administrative systems for direct charges either through the sale of bags, tags, containers or licenses, or through billing and an altered method for weight based waste collection.

  Additional administrative costs will be incurred in any user-fee system, although weight-based systems generally involve more administrative and technological costs. These costs, however, can be passed directly to the user of the service as one component of the user fee.

ONTARIO EXPERIENCE

The overall experience of Ontario municipalities with user fees for residential waste collection has been limited, and insufficient data are available for drawing any substantiated conclusions. Many Ontario municipalities have considered adopting user fees for this purpose, but only a few have actually undertaken such programs.

The Proctor & Redfern study on user fees summarized the efforts of six Ontario municipalities to establish such programs for residential waste. Gananoque and the Townships of Westmeath and McNab have initiated programs, while Cobourg and Oakville are in

the process of receiving approval to proceed. Peterborough attempted to establish a user-pay program, but a referendum held to obtain its approval was defeated.

Town of Gananoque

The Town started a mandatory tag system in July 1991 for an estimated 1991 population of 5,000 in approximately 2,200 households. Tags cost $1.00, and only tagged bags are collected. The program began with a 3-bag limit per pick-up with collection twice a week and was then changed to a 4-bag limit per pick-up with collection once a week.

The Town had previously established a backyard composting program in 1990 and a recycling depot in March 1991. A free tag is given out for every two bushels of recyclables delivered to the recycling depot. The depot takes in paper, glass, steel, aluminum, PET, and old corrugated cardboard.

The user-fee program was met at first with some unfavourable public opinion. Some illegal dumping occurred (e.g., in commercial dumpsters), but this problem has been greatly diminished through the locking of dumpsters and low public tolerance for illegal dumping.

Householder participation in recycling and source-reduction activities increased after implementation of the user-fee program. Specific results are as follows:

- By March 1992, the Town had distributed 15,000 free bag tags through the recycling depot.

- As of April 1992, approximately 900 composting units had been distributed to 40% of the Town's households.

- The amount of waste passing through the transfer station has decreased from an average of 32 tonnes to 18 tonnes a week.

- Revenue generated by the program is helping to offset the costs of waste disposal.

Township of Westmeath

Located in Renfrew County, the Township established a user-fee bag system in September 1991 for an estimated 1991 population of 2,300 in approximately 1,200 households. Householders buy special bags at $3.00 in which they set out their wastes for disposal. The Township had previously implemented a recycling program, establishing a depot at its landfill site in January 1991 and then pick-up at curbside in the fall of 1991. It also started a backyard composting program in 1990.

Although data for the user-fee program are not yet available, it has been judged generally successful. Since its inception, the demand for composting units has increased substantially, while the amount of waste requiring disposal has decreased.

Township of McNab

Also located in Renfrew County, the Township established a user-fee bag system in October 1991 for an estimated 1991 population of 5,200 in approximately 2,200 households. Householders can place up to four bags at the curb for pick-up without paying a user fee. Additional bags must carry a tag, which costs $1.00. Extra bags not bearing a tag are left at the curb with a red penalty notice.

The Township established a Blue Box program in 1989, which was being well supported by householders when the user-fee program was introduced. No data are yet available on the quantity of waste being generated versus the quantity being diverted from landfill.

Town of Cobourg

Cobourg is considering a user-fee, pay-by-the-bag program that would pay for the collection and disposal of residential wastes. Cobourg's current waste collection system allows single-family households to place only three containers a week at the curb. Cobourg residents have largely accepted this container limit.

Since it was imposed, waste generation has slightly decreased, and recyclable material recovery through Cobourg's Blue Box program has slightly increased.

Town of Oakville

Oakville is studying the possibility of staging a user-fee demonstration project in one or two of its collection areas. The Town is also planning a demonstration project to test a technology for weighing waste at curbside and to monitor collection productivity.

City of Peterborough

Peterborough staff developed a pay-by-the-bag user-fee program similar to Gananoque's, but the motion for its implementation was defeated in a referendum held during municipal elections on November 12, 1991. The program was intended to raise revenue to cover increasing resource and waste management costs. These extra costs will now be met by residential tax increases of approximately 12%.

U.S. EXPERIENCE

U.S. experience has indicated that the advantages of user fees outweigh the disadvantages. Some illegal dumping has occurred at the outset of programs, but has then quickly diminished. Positive municipal enforcement (e.g., violation notices without fines) and peer pressure from neighbours have yielded favourable results with offenders. Increased costs for administration have been minor and typically absorbed. Where increased costs have not been immediately absorbed, volume prices have been adjusted the following year. No cases have been identified of user-fee programs having been rescinded because of adverse public reaction or environmental impacts.

The Proctor & Redfern study conducted for WRAC on charging for residential resource and waste management services summarized the results of user fee programs for residential waste in a variety

of U.S. municipalities, including Seattle, Washington; Perkasie, Pennsylvania; Carlisle, Pennsylvania; Duluth, Georgia; Grand Rapids, Michigan; and Ilion, New York.

Seattle, Washington

Seattle (estimated 1990 population: 510,000) initially implemented a fixed waste collection charge per household regardless of the amount of waste produced and then switched, in 1981, to a volume-based rate that increases with the number of cans placed at curbside. The change has resulted in decreased waste generation and increased recycling.

Perkasie, Pennsylvania

The Borough of Perkasie (estimated 1990 population: 6,000) implemented a volume-based bag program in January 1988. Householders make use of special 20-gallon bags ($1.25 each) or 40-gallon bags ($2.00 each) bought from local stores. There is no limit on the number of bags that can be placed at curbside. The bag prices allow Perkasie to recover all waste collection and disposal costs, including the relatively low program administrative costs. The program has resulted in approximately a 50% decrease (by weight) in waste being disposed of at landfill and a 49% increase (by weight) in materials being recycled. Illegal dumping increased during the first year of the program, but has declined during the course of the program due, at least in part, to all offenders' names being published in the local newspaper.

Carlisle, Pennsylvania

The Borough of Carlisle (estimated 1990 population: 21,000) implemented a volume-based bag program in June 1990. Householders make use of 30-gallon bags costing $2.10. The bag price allows Carlisle to recover all waste collection and disposal costs, including the relatively low administrative costs. The Borough also established a recycling program in June

1990 for a wide variety of materials that recovers about 30% of its waste stream. No substantial increase occurred in illegal dumping, which carries a $250 fine.

Duluth, Georgia

The City of Duluth (estimated 1990 population: 3,100) started a volume-based bag program in 1970. Householders pay the City $15.20 for 20 bags. There is no limit on the number of bags that can be placed at curbside. With low administrative costs, this amount allows Duluth to recover all waste collection and disposal costs, as well as the cost of recovering recyclables. Illegal dumping has not increased.

Grand Rapids, Michigan

Grand Rapids (estimated 1990 population: 190,000) began a volume-based bag or tag program in 1971 for householders and tenants of apartment buildings with up to four units. The 30-gallon bags cost $0.75 each; the tags, $0.65. Residents pay $10.00 for special stickers to be used for setting out white goods for collection. Non-cooperating residents are first advised by letter of their violation. If they continue to disregard the program, the fees due are added to their utility bills. Program revenues are not enough to carry waste collection and disposal costs, the balance of which is covered through property taxes. Grand Rapids does not have a recycling program. As waste collection fees have increased, so has illegal dumping.

Ilion, New York

The Village of Ilion (estimated 1990 population: 10,500) began a volume-based bag program in June 1988. Residents can buy either 22-gallon bags for $1.75 or 30-gallon bags for $2.00 from local stores, which make a profit of $0.05 a bag. Bulky items carry a $3.00 fee if delivered to the public works department or a $5.00 fee if collected at curbside. Since the program started, there has been a 2% increase in illegal dumping, which carries a $50 fine. The Village also started a recycling program in 1987 for a wide range of materials.

IMPLEMENTING USER FEES IN ONTARIO

Barriers to Implementation

Interest in the concept of user fees for secondary resource and waste management services is growing. However, many municipalities have expressed concerns about the implications of introducing this approach. One of the principal reasons for lack of municipal action, to date, has been uncertainty regarding municipal authority to enact user fee programs under the Ontario Municipal Act. The general legal consensus is that the Act allows municipalities to implement flat rates for residential waste collection. In order to charge variable charges on a weight or volume basis, an amendment to the Act may be required. The Ministry of Municipal Affairs is currently considering such an amendment.

While U.S. user-fee programs have resulted in reduced waste generation and increased use of recycling programs, there is relatively little operational data as yet to demonstrate that user fees are workable within the Canadian context. As well, the potential for adverse public reaction and illegal dumping have created concerns and are cited as additional reasons for delay.

While a few Ontario municipalities have instituted user fees, others have been reluctant to proceed. However, many municipal representatives agree that user-fee programs will be required to meet waste diversion goals and that some negative reactions towards user fee programs are exaggerated. Overall, there is a developing consensus that user-fee programs would work if certain conditions prevailed, including the following:

- increased funding for public education, promotion, and consultation programs for both secondary resource and waste management systems;

- provisions for subsidizing householders unable to pay the true cost of user fees;

- freedom to design a user-fee system specific to a municipality's "operating environment", selecting from a list of alternative systems, as it moves from a fully tax-based cost recovery system to a user-fee system.

WRAC's Position

In developing positions on a range of waste reduction issues, WRAC has identified a number of planning principles. These principles include support for the 3Rs hierarchy as well as the belief that waste management systems should be based on a fair and reasonable approach with each sector accepting its share of responsibility. As well, WRAC supports direct payment for costs associated with 3Rs programs rather than indirect payment.

In light of these planning principles, WRAC believes (1) that user fees represent a fair and reasonable approach for recovering secondary resource and waste management system costs and (2) that variable user fees support and would encourage development of the 3Rs hierarchy.

In order to facilitate the implementation of user fees in Ontario, WRAC recommends:

1. That the necessary amendments be made to the Municipal Act in order to grant municipalities the authority to charge for secondary resource and waste management system costs by class, weight, volume, or any criteria which they choose.

2. That items to be included in true-cost accounting for resource and waste management systems be clearly defined so that all actual costs can be included in user fees. (The Ministry is currently addressing this matter.)

3. That costs for secondary resource collection and waste collection and disposal be indicated as separate items on municipal property tax bills as a preliminary step to the introduction of user fees.

4. That comprehensive public education, promotion, and consultation be undertaken regarding the impact of householder behaviour on waste generation, the actual costs associated with secondary resource and waste management systems, and the role of user fees in addressing system inequities and encouraging behavioural change.

5. That demonstration projects based on a several user-pay systems, including weight-based systems, be implemented in order to provide additional relevant data for Ontario municipalities.

6. That, notwithstanding the need for true-cost accounting, user fees for secondary resource management systems be sufficiently lower than user fees for waste management systems so as to encourage appropriate societal support for waste reduction, reuse, recycling, and composting.

7. That existing social-service support programs incorporate the costs of secondary resource and waste management user fees in their assessment of financial support requirements for low- and fixed-income residents.

8. That variable-cost user-fee systems for residential resource and waste management systems be implemented by all Ontario municipalities.

In conclusion, WRAC believes that secondary resource and waste management programs based on user fees would allow Ontario to meet its waste diversion goals both effectively and fairly for all concerned.

Appendix D

WRAC POSITION PAPER: THE USE OF TARGETS IN WASTE MANAGEMENT POLICY

NOTE: This paper was written in support of WRAC's original Shared Model, which has been transformed into the Shared Approach within the Resource Stewardship Model.

INTRODUCTION

The Waste Reduction Advisory Committee's Order in Council requires that the Committee advise the Ontario Minister of the Environment on

> "the establishing, by September, 1991, of interim specific targets for waste diversion, including incentives and disincentives, or such regulations as it considers advisable in order to ensure the achievement of the Minister's waste diversion goals".

The Committee's mandate further requires that it advise on

> "the means of measuring the achievement of the targets, the monitoring of the targets, any revisions to the targets, the progress being made in achieving the targets and the appropriate actions for not achieving the targets".

WRAC's first step in addressing the above requirements in its mandate was a three-fold one as follows:

- to commission a study to review the use of targets in other jurisdictions;

- to address any obstacles in the use of targets as policy tools;

- to develop a framework for a target system that would be effective in achieving Ontario's waste diversion goals.

This work, undertaken by VHB Research & Consulting Inc., resulted in the report "The Development and Use of Targets in Waste Management Policy". As this work was proceeding, the Committee was also deeply involved in a process that led to the development of its Shared Model. The Model outlines the application of a stewardship approach to waste management in Ontario and defines the necessary roles, responsibilities, and accountability mechanisms for implementing such an approach. As such, the work on targets became an important part of the accountability aspects of the Model.

The Committee has reviewed the VHB report, considered targets in the light of WRAC's specific mandate, and come to a consensus on the potential role of targets for Ontario's waste reduction policy through the implementation of the Shared Model. That role, including a description of the advantages and limitations of the use of numerical targets, is outlined in this position paper.

TARGETS AND REGULATED REQUIREMENTS

Although the use of targets to achieve public policy goals is a fairly common practice, it has not often been a very sophisticated one. Historically, the term 'target' has been used to refer to both of the following:

- **broad policy goals** (e.g., the Ontario goal of 50-per-cent diversion of waste by the year 2000); and,

- **regulated requirements** (e.g., a percentage reduction in package weight).

By definition, a target is "a minimum result aimed at*", but not required. In other words, a target is a goal to strive for. The

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* The Concise Oxford Dictionary

first example is, by this definition, a true target. *With this type of general target you cannot assign the responsibility for its achievement to a specific person or organization, because many different parties have a significant influence on whether or not the target is met.*

The second example, a regulated requirement, is *not* a target. A regulated requirement is a mandatory level of achievement. It results from an *action* or set of actions by the regulated party. *The government assumes that the party regulated has sufficient control over the proceedings to assure that if the necessary actions are taken the requirement will be met.*

WRAC believes that this is an important distinction. Problems arise when a target is treated as a regulated requirement (e.g., the soft drink container refillable ratios). The regulation (and thus the target itself) can be challenged in the courts, as the regulated party can claim "due diligence" in taking actions to meet a responsibility (the target) over which that party does not have full authority or control.

TARGETS WITHIN A POLICY SYSTEM

The mistake of using overall targets as regulatory requirements has probably resulted from the need to assign responsibility. Without the assignment of responsibility, there is no accountability, and the target's usefulness is limited. However, the fact that overall targets cannot be regulated does not mean that targets cannot be associated with regulation, as part of a larger set of measures. In order to maximize a target's usefulness, while avoiding the mistake of treating it as a regulated requirement, it should be incorporated within a *policy system*.

There are four components to a policy system that utilizes targets:

1. quantitative target or targets;

2. method of monitoring progress towards the targets;

3. policy measures for inducing that progress;

4. mechanism for altering the targets or measures should the policy goals not be met.

In this systemic approach to target-setting, sub-targets and desired actions are part of a package of measures co-ordinated by the overall target. This approach is based on the idea that the success of individual measures always depends upon the proper functioning of a number of key points in the system. By setting sub-targets and monitoring at key points, it is possible to determine where the system is malfunctioning. Individual sub-targets can be adjusted or new measures introduced to bring about the desired result -- the achievement of the overall target.

The activity of setting sub-targets within an overall target system can also be described as disaggregating the overall target. An example of disaggregation is shown in Figure 1, using the newspaper publishing industry as an example. An overall waste reduction target for newsprint of 56 per cent can be disaggregated into a number of more basic component parts, including source reduction (light-weighting of paper), coverage of both residential and IC&I sources by collection systems, residential and ICI capture rates, etc. The overall target for newsprint is a result of a series of sub-targets and actions*. A significant failure in any of the component levels of the target (e.g., a capture rate only half of what was expected), would result in a large negative impact on the overall target.

Regulated requirements *may or may not* be among the measures a government chooses to include in a policy system. If they are, they should be applied at a level of disaggregation of the target at which responsibility can be clearly assigned and specific actions regulated. For example, among the levels that make up the target in Figure 1 are areas where regulated requirements could be applied, because sole responsibility can be assigned (e.g., the % light-weighting, the coverage provided by

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* Responsibility for a sub-target, as for the overall target, cannot be directly assigned to any one party; responsibility for actions can be assigned.

municipalities). The *actions* required of the responsible parties in these cases can be required through regulation.

THE SHARED MODEL AS A POLICY SYSTEM INCORPORATING TARGETS

While WRAC's Shared Model was developed as a comprehensive system for applying the stewardship concept to waste management, it also stands as a good example of a policy system that incorporates targets. This is primarily because the Model, in its attempt to spread responsibility for waste management from individual generators back to the producers of products and packages, has taken the position that a voluntary approach is superior to a fully regulatory one. In so doing, it necessitates the setting up of a means of ensuring accountability by the different players. On the producer side, this accountability would be ensured through the negotiating of targets and specific requirements for the 3Rs between government and various industry sectors, the signing of Memorandums of Understanding (MOUs) between the respective parties, and the monitoring and evaluation of progress towards those targets and required actions over agreed-upon schedules.

This system incorporates the four components listed previously:

- quantitative targets;
- monitoring methods;
- policy measures for inducing progress;
- a mechanism of adjustment in the case of failure.

The Shared Model stipulates that the targets must be measurable, ensuring system accountability, as opposed to sector or firm accountability. It is also specific in stating that the targets are *indicators* of success or failure. The overall target monitors the system as a whole, the disaggregated or sub-targets monitor components of the system. If the monitoring of the targets indicates an area where progress is unsatisfactory, an evaluation of the disaggregated data can tell the government

where the problem lies. If remedial measures, including voluntary ones by industry (e.g., higher market prices for the secondary material), or possible regulatory support measures by government (e.g., a landfill ban of the material in question)* are also unsuccessful, a mechanism exists for altering the system: the development of consultative regulations. These would create a more rigid system, in which many more actions (of both producers and generators) would be regulated. Targets would still not be regulated, although regulated levels of achievement (e.g., reductions in package weights, reusable containers for various container sizes, etc.) might be part of such a system.

CONCLUSION

In summary, a policy system that includes targets can be designed to be primarily voluntary, or to be a mixture of both voluntary and regulatory measures. In either case, the actual targets and sub-targets cannot be regulated, but supporting actions by responsible parties *can* be required by law.

Effective use of targets requires the implementation of a comprehensive policy system. The system should be based on a thorough understanding of how each player affects the flow of waste through the waste management system, and on a clear understanding of the distinction between targets and regulated requirements. The system must be monitored for progress towards the targets and kept in check by further government intervention when and if necessary.

Within such a system, targets can serve a number of purposes. If properly defined, they can:

- provide clear, quantitative policy objectives;

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* The remedial measures given here are just examples. They could also have been negotiated as part of the original MOU. The central point is the use of the targets as indicators: If the measures in the original agreement are sufficient, the overall targets will be met; if they are not, additional measures can be applied that are tailored to the weaknesses revealed by monitoring the disaggregated targets.

- communicate the urgency of a situation and establish a time frame for accomplishment;

- break down long-term goals into a series of short-term, achievable tasks;

- provide benchmarks against which the success of policy measures can be compared;

- act as indicators, signalling where further action is required.

WRAC feels that targets within policy systems as outlined above have a key role to play in the achievement of Ontario's long-term waste management goals.

Appendix E

ORGANIC WASTE ACTION PLAN FOR ONTARIO

Waste Reduction Advisory Committee

July 1992

FINAL REPORT

TABLE OF CONTENTS

PREFACE

This report summarizes the deliberations of the Waste Reduction Advisory Committee (WRAC) regarding the organic wastes being produced by residential and IC&I (industrial, commercial, and institutional) sources in Ontario and the development of certain policy recommendations for dealing with these wastes. Formed in mid-1990, WRAC is a multi-stakeholder body, providing independent waste management advice to the Ontario Minister of the Environment on the reduction, reuse, recycling, and composting of residential, commercial, institutional, and industrial, non-hazardous solid waste and household hazardous waste in Ontario.

WRAC's investigation of organic wastes was undertaken on its behalf by its Organic Waste Diversion Sub-Committee and the Sub-Committee's special support group the Advisory Forum. The Sub-Committee's membership to date has been widely based, including not only WRAC representatives but also members from municipalities, universities, industry, and environmental and agricultural organizations. The Advisory Forum has included additional individuals from these areas, as well as several from Ontario government agencies and consulting firms working in the waste management field. Work on the Organic Waste Action Plan was conducted over approximately a one-year period from early 1991 to April 1992 and included, in addition to Sub-Committee meetings and informal working sessions, three one-day workshops in June and October of 1991 and in March of 1992. (See Appendix A for lists of WRAC, Sub-Committee and Advisory Forum members.)

The Waste Reduction Advisory Committee would like to acknowledge the contributions of the following technical consultants in its organic waste investigations:

- Bill Goodings, John McIrvine and Jay Stanford, Proctor & Redfern Group

- Jack McGinnis, Recycling Development Corporation

WRAC would also like to thank the following consultants for their assistance in the conducting of workshops and in the preparation of this report:

- Mary Rowe, Denis Lefebvre, and A.J. Findlay, MWR & Associates

- Douglas Lintula, Writer/Editorial Consultant

1.0 INTRODUCTION

One of Ontario's key environmental goals is to reduce waste generation by 50 per cent by the year 2000 as compared to 1988. With organic wastes making up approximately 20 per cent of the province's total waste stream, it is clear that significant steps can be taken to achieve this goal by reducing organic waste generation as much as possible.

Organic wastes are, as defined by the Organic Waste Diversion Sub-Committee, "organo-biodegradable" matter, that is, primarily cellulosic or of animal origin. Excluded from this definition are transformed organic (carbonaceous) materials such as petroleum byproducts (e.g., plastics). Organic wastes are generated everywhere and in great variety by homes, businesses, institutions, and industries, as well as along tree-lined streets and in parks.

To make the task of policy development more manageable attention was directed towards the reduction, reuse, and recycling (3Rs) options for certain organic materials that have traditionally ended up in landfill sites, including food waste, yard waste, and some paper fibres. The objective was to develop a general strategy, with supporting recommendations, by which Ontario could build on existing initiatives to decrease the disposal of organic wastes and to increase the reuse and recycling of such materials.

To achieve this objective, the following tasks were undertaken:

- the development of guiding principles for organic waste management;

- the creation of a hierarchy of end uses for organic materials;

- the consideration of the roles and responsibilities of all stakeholders concerned with the planning, funding, and execution of organic waste management programs;

- the development of a general strategy for organic waste management in Ontario, including recommendations for funding and implementing the resulting program;

- the development of support recommendations for implementing the suggested waste management program.

In the process of this work, many interrelated aspects of waste management in Ontario were considered, including material flow control, provincial guidelines and approval procedures, material recovery systems, public education, and materials markets. The end result is a general strategy for managing wet organic wastes in Ontario.

2.0 GUIDING PRINCIPLES FOR ORGANIC WASTE MANAGEMENT

A set of guiding principles was developed, both to facilitate discussions and to be considered by the Ontario government during its continued development of organic waste management programs. WRAC has concluded that an organic waste management system for Ontario should

1. **Maximize value of resources and integrity of environment.** The waste management system should preferentially promote environmentally superior end-uses for secondary materials, allowing for technical and economic constraints.

2. **Integrate the approach to organic waste management with the management of all other waste streams.** The system should be compatible or integrated with other 3Rs systems (e.g., Blue Box, wet-dry recovery, etc.), and should only resort to mandatory actions where voluntary approaches (including incentives) have failed.

3. **Be fair and equitable, and based on the concept of "stewardship of resources".** Stewardship of resources implies clear definitions of roles and responsibilities. These responsibilities should be distributed fairly between stakeholders. This means that

- no one agent or sector, public or private, should carry all of the responsibility;

- authority should be commensurate with responsibility.

4. **Promote personal awareness through involvement.** If people everywhere participate in the solutions to common waste problems, they will feel empowered. They will also become more aware of how their actions are either part of the problem or part of the solution. However, a system that is too inconvenient will not be sustainable. Therefore, a balance must be struck between convenience for generators and their involvement in solutions.

5. **Promote constant re-evaluation and innovation.** Technical advancements will provide new options. Increased generator awareness will allow for systems development and growth. If the infrastructure has built-in flexibility and incentive for improvement, benefits such as waste diversion and resource/energy conservation will be maximized over time.

6. **Be practical, feasible, and sustainable.** The Province's goals cannot be achieved by a system that is so impractical or unwieldy that sustaining it requires constant effort by government. Once in place, the system should be cost-effective and should run by itself with minimal government intervention.

7. **Be operated under the precepts of true-cost accounting.** To be consistent with the guidelines for true-cost accounting being developed by the Ministry for application by municipalities in all of their waste management activities.

Detailed discussion of the first principle, i.e., the two-fold need to maximize resources and to promote environmentally superior end-uses for secondary materials, gave direct rise to the development of the Organic Waste Management Hierarchy.

3.0 ORGANIC WASTE MANAGEMENT HIERARCHY

The Organic Waste Management Hierarchy was developed as a "decision-making tree" for deciding on end-uses for organic wastes, based generally on degree of environmental impact and amount of processing required. The intent is to maximize the benefit of the value-added nature of organic waste streams. As indicated in Figure 3.1, the Hierarchy embodies the 3Rs hierarchy of reduce, reuse, and recycle as the preferred options to consider before other approaches involving energy conversion, disposal, or incineration. WRAC considers the Hierarchy to be a general planning tool; it is meant to function as a preferred framework for considering end-uses based on the properties of given materials and prevailing circumstances, which may vary over time and from one locality to another. Key factors would be:

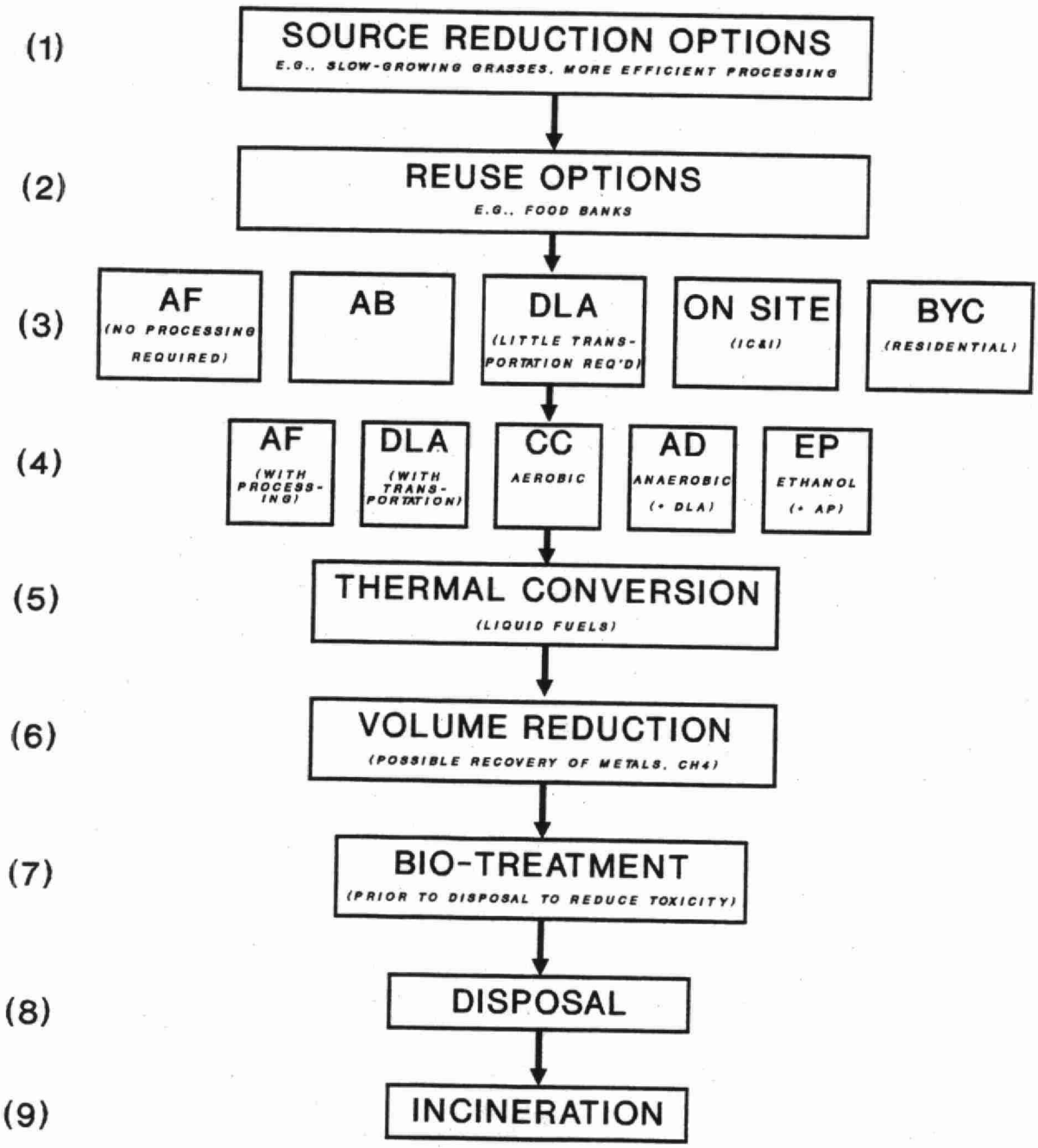
- applicability of an option to a given material
- proximity of available facilities for pursuing options
- transportation costs.

In this way, the Hierarchy could be used as a disciplined check-list for municipalities and others to consider during waste management planning, as a reminder to examine "higher" end uses before choosing "lower" end uses to ensure that sound social and environmental opportunities are not being missed. In other words, anyone proposing one of the options in the Hierarchy for a given portion of the waste stream should be able to demonstrate the reason for its selection over all of the options above it. The intention is to "push" resource stewardship "up the Hierarchy". The rejection of alternatives below the option selected need not be justified.

Strict application of the hierarchy would require many changes in current organic waste management practices. Barriers or constraints to "pushing resource stewardship up the hierarchy" vary from one end-use to another. They include lack of space and facilities, lack of commitment and understanding of technology, and resistance to change, as well as incomplete guidelines, inadequate markets, social concerns, perceived health risks (e.g.,

Figure 3.1

ORGANIC WASTE MANAGEMENT HIERARCHY



LEGEND

AD - "ANAEROBIC DIGESTION"
AF - "ANIMAL FEED"
BYC - "BACKYARD COMPOSTING"
AB - "ANIMAL BEDDING"
CC - "CENTRALIZED COMPOSTING"
DLA - "DIRECT LAND APPLICATION"
EP - "ETHANOL PRODUCTION"

contamination), and higher initial costs. In the long run, however, the social and environmental benefits and eventual financial savings should outweigh short-term adjustments and costs.

3.1 Source Reduction

Source reduction options prevent waste from being produced in the first place.

- Food producers adopting more efficient processing practices could reduce their generation of organic waste residues.

- Restaurants and company/institutional cafeterias could reduce their generation of food wastes by serving more appropriately sized food portions and, in many instances, more palatable meals.

- Supermarkets and other sellers of food products could reduce spoilage through improved display and quality control practices.

- Landscapers, gardeners, and homeowners using new varieties of slower-growing grasses would have fewer lawn clippings to handle. They would have also have less material to cope with if they prevented inappropriate plant growth and placed less emphasis on the trimming and "manicuring" of properties.

The use of backyard or home composting units are not considered source reduction techniques, as they do not prevent the production of waste, only its entrance into the municipal waste stream.

3.2 Reuse

Reuse as an option applies primarily to food wastes, which constitute a vital resource, whether post-consumer (generated in the home, in restaurants and company/institutional cafeterias) or post-industrial (generated as "off-spec" foods or as byproducts of manufacturing processes). Edible off-spec food or surplus food from restaurants and stores can be used to feed the needy through food banks, which have sprung up in major cities across Canada in

recent years. Constraints to this approach include societal implications of food banks, some potential for health risks, and existing government regulations governing the reuse of food.

3.3 Primary Recycling Options

Several recycling alternatives that require no actual processing or minimal transportation were grouped together. These options were deemed environmentally superior to recycling options that do involve some degree of processing or require materials to be transported over long distances.

3.3.1 **Animal Feed.** Some food wastes can be used directly as animal feed with no processing required. However, research and development are required to build the necessary infrastructure, create stable markets, and develop guidelines and standards regarding the suitability of particular foods for different animals (e.g., nutrient value) and quality requirements (e.g, contamination). The federal and provincial governments would have substantial roles to play by facilitating the development of their end-uses, possibly through workshops and demonstration projects organized by their agricultural and environmental agencies.

3.3.2 **Animal Bedding.** Certain paper wastes have potential for use as animal bedding, but, because of toxicity concerns, additional research is required into the suitability of different paper fibres for this purpose.

3.3.3 **Direct Land Application** (Minimal Transportation Required). The direct land application of food, yard, and industrial organic wastes, without processing, is a common seasonal practice in some agricultural areas; properly employed, these materials can serve as natural soil enhancers. The Ministry of the Environment and the Ministry of Agriculture and Food have developed general guidelines for assessing such applications on a case-by-case basis. Full chemical characterization of the wastes is essential.

3.3.4 **On-Site Composting** (IC&I). Composting represents one of the most important approaches for dealing with organic wastes,

whether on site where suitable materials (food, yard, paper wastes) are generated or in centralized facilities. On-site composting by IC&I waste generators, particularly institutions, offers considerable potential, but generally is constrained by lack of space, little interest in the effort required, and a general excess of yard wastes that cannot be accommodated without processing. IC&I organic wastes will more likely be composted in off-site centralized facilities.

3.3.5 **Backyard Composting** (Residential). Residential backyard composting is being supported by the Ministry of the Environment through subsidies to municipalities to help defray composter costs in an effort to increase the on-site composting of kitchen scraps and yard wastes (leaves, grass and brush clippings). This option should be strongly promoted and supported to the greatest extent possible through the provision of low-cost composters, educational programs, and initiatives such as the master composter program.

3.4 Secondary Recycling Options

Several recycling options that require some measure of processing or involve a significant amount of transportation were grouped together.

3.4.1 **Animal Feed.** The extensive use of food wastes as animal feed would require centralized food processing/ distribution facilities where certain foods (e.g., stale bakery goods, potato chips) could be dried and milled into feed supplements. Government agencies would play central facilitating roles, with private industry undertaking the implementation and operation of such facilities.

Certain waste paper fibres also have potential as animal feed (e.g., for cattle), but research is required to consider the various constraints now being imposed on this potential feedstock.

3.4.2 **Direct Land Application** (Significant Transportation Required). If the wastes to be directly applied must be transported significant distances, the advantages over centralized composting are not as clear-cut as when the wastes can be applied

locally. The respective merits of these options should be evaluated on a case-by-case basis.

3.4.3 **Centralized Composting and Anaerobic Digestion.** Several municipalities in Ontario have undertaken centralized composting projects on a pilot basis. The two- versus three-stream source separation debate, however, is still unresolved. The three-stream system appears to produce fewer contaminated materials, but experience to date is not definitive on this point.

Intermediate-scale composting technology and systems need to be developed on a community basis to handle both residential and IC&I organic wastes. The mandatory source separation of organic wastes from dry recyclables would be required. Government should not be expected to build and operate all of the required facilities for centralized composting; stewardship responsibil-ities must be applied to generators of organic wastes in a manner which results in the private sector sharing responsibility for the development of organic waste processing solutions.

Centralized composting could potentially take care of 20 percent of solid wastes and could involve both aerobic and anaerobic processes. The aerobic process would produce stabilized compost; the anaerobic process would generate methane gas (a potential fuel), as well as a potential soil-amendment material.

3.4.4 **Ethanol Production.** Chemical and biological processes (e.g., fermentation) could be used to convert cellulosic wastes into ethanol. The production of ethanol from agricultural feedstock is being pursued by various companies across Canada. The residual biomass could be used for animal feed.

3.5 **Other Conversion/Treatment Options**

Other energy conversion options, while less beneficial environmentally than the application of stabilized carbon (compost) to soils, could be used to convert cellulosic wastes to gaseous and liquid fuels. Pyrolytic processes can yield liquid fuels, whereas the products of combustion can yield methane gas. Depending on

local fuel requirements, methane could be bled into the domestic natural gas supply or could be chemically reformed to produce methanol.

3.6 Volume Reduction and Bio-Treatment

These categories refer to methods of treating contaminated organic waste, either to reduce its volume before landfilling, or, in some cases, to reduce the toxicity of the material prior to disposal. These should be considered last-resort measures.

3.7 Disposal/Incineration

The disposal of organic wastes in landfill or their incineration must only be considered when no other options are viable, and after one or more of the options in 3.6 have been incorporated into the plan.

4.0 ROLES AND RESPONSIBILITIES

4.1 General Obligations

Having established the guiding principles and hierarchy, the next task involved developing a framework that would allow environmental goals to be met, with concerned, involved parties playing significant and responsible roles, all within a realistic timetable.

The general roles and responsibilities of concerned parties were summarized as follows:

- The Province should develop policies; regulate programs (set standards with clear, consistent rules); provide some measure of funding; approve facilities; police compliance; undertake educational programs.

- Municipalities should continue, as in the past, to fund, build, and operate facilities; to undertake educational programs.

- The private sector should also play a role to fund, build, and operate facilities; to undertake educational programs.

- Consumers should reduce, reuse, and recycle wastes, and, it was agreed, they should take part in public siting and approvals discussions.

In addition to the above, two additional agreements were reached:

- The federal government should fund research and development.

- Municipalities should be responsible for ensuring that wet wastes do not go into landfill, i.e., by implementing mandatory bans.

At the same time, two key issues had to be addressed:

- How should municipalities obtain capital funding for facilities required to handle and treat organic wastes?

- Should municipalities control the collection, transportation, and treatment of organic wastes from all sources (residential and IC&I) within their boundaries (flow control)?

These two issues are the subject of sections 4.2 and 4.3.

4.2 **Funding of Municipal Facilities**

WRAC supports the Organic Waste Diversion Sub-Committee's conclusion that the Province should not be involved in the funding of organic waste management development beyond providing seed money for demonstration composting facilities and pilot projects, although funding for backyard composters and their demonstration projects should continue. All other municipal funding demands, both capital and operating, should be met by the municipalities themselves, not from general revenues but through user levies of one sort or another.

Operating costs could be managed through an ongoing user-pay system.

Capital costs would be appropriated through the creation of reserve funds built up over time. WRAC recommends

- *that the provincial government encourage municipalities to address the issue of meeting capital costs for composting facilities, not from general revenues, but by creating reserve funds, the revenues for these funds to come from pay-by-the-bag user fees, tipping fee surcharges, or other levies connected with the collection and disposal of wastes within their jurisdictions.*

Municipalities would vary in their capability to raise money in such ways for reserve funds. Many northern communities, for example, do not levy tipping fees. In the north, centralized composting facilities will not generally be required because of the greater amount of land available for other uses of wet wastes (e.g., direct land application; mine tailings reclamation).

4.3 **Flow Control**

From the outset, it was decided that municipalities should continue to be responsible for the collection and treatment of residential organic wastes. To be addressed was whether municipalities should have full or partial control over the flow of organic wastes from IC&I sources. For a municipality treating both residential and IC&I organic wastes, such control would ensure material supply. However, municipal control would lessen the opportunity for involvement by the private sector in this area of waste management and thus decrease the potential for certain efficiencies that the play of market forces may eventually achieve.

Eventually, it was agreed that municipalities should not be responsible for IC&I organic wastes. Responsibility for the receiving and processing of these wastes should be left with those who generate them. This would create incentive for private-sector investment in composting facilities.

An argument raised against this approach (i.e., private control of IC&I organic wastes) was the question of what would happen to such material should a private facility go out of business. With a

landfill ban on organics in place and with its own treatment facilities operating at full capacity, a municipality would be unable to accept this material and would be under no obligation to do so. Such an eventuality, it was noted, would be handled by market forces: the material would be long-hauled to an outside facility until either the public or the private sector recognized the opportunities involved and put another facility into place locally, or increased the size of an existing facility. Private generators would be obliged to continue to pay for the disposition of their organic wastes.

WRAC recommends

- *that the provincial government make a clear policy statement as to the separate responsibilities of the public and private sectors regarding the collection and treatment of their respective organic waste streams, while both allowing and encouraging municipalities and the private sector to enter into joint arrangements for collecting and treating organic wastes.*

5.0 GENERAL STRATEGY FOR ORGANIC WASTE MANAGEMENT

The general strategy for organic waste management in Ontario that emerged from meetings and workshops is based on the following major points of general consensus:

- the division of responsibility for various aspects of organic wastes between the public (residential) and private (IC&I generator) sectors;

- the elimination of provincial subsidies for municipal composting facilities;

- the adoption of user pay mechanisms to fund both capital and operating costs of municipal organic waste treatment facilities;

- the banning of organic wastes from landfill;

- the mandatory source separation of organics from other waste.

Taken together, these measures would provide Ontario with an effective program for managing organic wastes and helping achieve the provincial's waste reduction goal. Municipalities would be responsible for treating the organic wastes they collect now from residential and other sources. IC&I generators would be responsible for their own organic wastes; the provision of facilities for handling and processing those wastes would be left to market forces. Where appropriate, joint ventures could be organized between municipalities and private-sector proponents.

To effect the above program, WRAC recommends the following:

- *that the provincial government recommend to municipalities that they start building reserve funds in 1993 for future capital requirements for wet waste management;*

- *that the provincial government phase out subsidies for municipal wet waste management programs by 1996 (excluding backyard composting);*

- *that the provincial government require municipalities to phase in user pay programs for wet waste by 1996;*

- *that the provincial government set a target date (December 31, 1992 for the GTA, December 31, 1993 for remaining Ontario municipalities) for a specified number of backyard composters to be in place in Ontario;*

- *that the provincial government legislate municipalities to provide households with backyard composters by a specified time.*

- *that the provincial government require municipalities in southern Ontario to undertake the separate collection of organic, or "wet", wastes from other wastes by 1996;*

- *that the provincial government require municipalities to ban organic materials from landfills in southern Ontario by 1998.*

6.0 PROGRAM SUPPORT MEASURES

Aside from establishing the legislative framework that will require municipalities and industry generators to do other than simply dispose of organic wastes, the provincial government must also take steps to ensure that alternative measures can be implemented smoothly and consistently across the province. In this regard WRAC welcomes the Ministry of the Environment's intention to allow centralized composting facilities to be established by "permit-by-rule" procedures and its development of composting guidelines, which it should attempt to complete as soon as possible.

In addition, WRAC wishes to make recommendations in the following related areas:

- administrative and approvals procedures
- education and communications
- funding and financial incentives
- technological development
- promotion and marketing

6.1 Administrative and Approvals Procedures

WRAC recommends

- *that the provincial government require by the end of 1992 that guidelines for handling and treating organic materials be incorporated in*

  (a) any programs requiring waste audits and waste reduction plans;

  (b) relevant sections of building codes;

- *that the provincial government*

  (a) ensure that Permit-by-rule is in place by the end of 1992;

  (b) ensure that if no Permit-by-rule applies in specific cases, that approvals can still be obtained within 6 months;

  (c) ensure uniform enforcement of regulations and guidelines across the province;

- *that the provincial government examine its definition of "recyclable waste" to ensure that it does not represent a barrier to the use of paper fibre as animal bedding;*

Regarding the involvement of other Ontario government agencies, it was decided that the Ministry of the Environment should make every effort to pool available information from all sources so that the most comprehensive recommendations might be made for the handling of organic wastes in Ontario. In particular, it was noted that the development of better programs for the direct land application of appropriate non-agricultural wastes was being hindered, in part, by a lack of communication among the various ministries concerned with that issue and related matters.

WRAC recommends

- *that the Ministry of the Environment, through the inter-ministerial committee structure, improve communications with the Ministries of Health, Agriculture and Food, and all other relevant Ministries, regarding the development of programs for the direct land application of appropriate non-agricultural waste.*

6.2 Education and Communications

The mandatory separation of organic wastes at source and their banning from landfill will require a significant adjustment in the waste management habits of everyone concerned. A wide-spread

communications and educational program will have to be undertaken to make industry, municipalities, and householders aware of the need for organic waste source separation and the ways in which it can be achieved.

WRAC recommends

- *that the Minister of the Environment endorse composting as a fundamental waste management measure to be considered by all who generate organic wastes;*

- *that the provincial government undertake a public education program on organic waste management systems and procedures through school curricula;*

- *that the appropriate agencies undertake educational programs on the options available to homeowners for reducing yard waste generation, these programs to be supplied through government agencies, nurseries, and landscape companies;*

- *that the Ministry of the Environment support the expansion of the Master Composter program;*

6.3 **Funding and Financial Incentives**

Municipalities, it has already been recommended, should be responsible for funding the capital costs of organic waste treatment facilities through revenues raised by user charges. The provincial government must also continue to provide funding for the development of organic waste programs.

WRAC recommends

- *that the provincial government fund*

  (a) the research and development of municipal, intermediate-scale, centralized composting demonstration projects;

(b) the research and development of institutional, on-site composting demonstration projects;

(c) research into the use of organics, including paper mill sludges, on agricultural lands.

6.4 Technological Development

While research into varied technological aspects of organic waste management will undoubtedly be carried on by all levels of government, the federal government has a central developmental role to play for the country as a whole, in part because of its control over the granting of patents and product licences.

WRAC recommends

- *that the federal government be urged to fund*

  (a) the development of alternative uses for wet wastes that cannot be used for agricultural purposes;

  (b) research into the contamination of organic wastes destined to be used as animal feed;

  (c) research of new and intermediate processing technologies.

  (d) research into the composition of paper fibre regarding its applicability as animal bedding and animal feed, with particular emphasis on potential toxic effects.

6.5 Promotion and Marketing

To ensure that the large quantities of compost that will be produced once this action plan is implemented are used optimally, WRAC recommends

- *that the provincial government*

  (a) establish models for predicting material flows and quality of end product;

(b) establish an "end use" strategy for the finished product.

7.0 IN SUMMARY

Organic wastes represent a substantial proportion of total waste generation in Ontario. Their reduction, reuse, and recycling are vital to both Ontario's environmental well-being and economic development. The adjustments required by all concerned to reduce organic waste generation and to make better use of the resources remaining could result in radical changes in municipal and IC&I organic waste management practices and habits. The Blue Box experience has shown, however, that Ontario residents are, by and large, ready to commit themselves to change for the sake of environmental improvement. In addition, as the economics of improved organic waste management practice become more apparent to industrial, commercial, and institutional waste generators, the research and development required for the related benefits to be realized should begin to be quickly advanced and the environment correspondingly served.

APPENDIX A
(For Organic Waste Action Plan)
WASTE REDUCTION ADVISORY COMMITTEE MEMBERSHIP

Ms. J. Wendy Cook, Chairperson
Waste Reduction Advisory Committee

Mr. Tom Klein Beernink, Co-ordinator
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Mr. Dick Buggeln, Superintendent
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Mr. Bob Flemington, President & Chief Executive Officer
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Canadian Pulp & Paper Association

Mr. Alasdair McKichan, President
Retail Council of Canada

Mr. Frank O'Hagan, Alderman
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Mr. Jack Rosen, President
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Ms Christa Pettingill
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Dr. Paul Voroney
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Mr. Bill Van Vliet
Quebec & Ontario Paper

Mr. Brendan Killackey
Ministry of the Environment

APPENDIX B
(For Organic Waste Action Plan)
Summary of Recommendations

1. That the provincial government encourage municipalities to address the issue of meeting capital costs for composting facilities, not from general revenues, but by creating reserve funds, the revenues for these funds to come from pay-by-the-bag user fees, tipping fee surcharges, or other levies connected with the collection and disposal of wastes within their jurisdictions.

2. That the provincial government make a clear policy statement as to the separate responsibilities of the public and private sectors regarding the collection and treatment of their respective organic waste streams, while both allowing and encouraging municipalities and the private sector to enter into joint arrangements for collecting and treating organic wastes.

3. That the provincial government recommend to municipalities that they start building reserve funds in 1993 for future capital requirements for wet waste management.

4. That the provincial government phase out subsidies for municipal wet waste management programs by 1996 (excluding backyard composting).

5. That the provincial government require municipalities to phase in user pay programs for wet waste by 1996.

6. That the provincial government set a target date (December 31, 1992 for the GTA, December 31, 1993 for remaining Ontario municipalities) for a specified number of backyard composters to be in place in Ontario.

7. That the provincial government legislate municipalities to provide households with backyard composters by a specified time.

8. That the provincial government require municipalities in southern Ontario to undertake the separate collection of organic, or "wet", wastes from other wastes by 1996.

9. That the provincial government ban organic materials from landfills in southern Ontario by 1998.

10. That the provincial government require by the end of 1992 that guidelines for handling and treating organic materials be incorporated in

    (a) any programs requiring waste audits and waste reduction plans;

    (b) relevant sections of building codes.

11. That the provincial government

    (a) ensure that Permit-by-rule is in place by the end of 1992;

    (b) ensure that if no Permit-by-rule applies in specific cases, that approvals can still be obtained within 6 months;

    (c) ensure uniform enforcement of regulations and guidelines across the province.

12. That the provincial government examine its definition of "recyclable waste" to ensure that it does not represent a barrier to the use of paper fibre as animal bedding.

13. That the Ministry of the Environment, through the inter-ministerial committee structure, improve communications with the Ministries of Health, Agriculture and Food, and all other relevant Ministries, regarding the development of programs for the direct land application of appropriate non-agricultural waste.

14. That the Minister of the Environment endorse composting as a fundamental waste management measure to be considered by all who generate organic wastes.

15. That the provincial government undertake a public education program on organic waste management systems and procedures through school curricula.

16. That the appropriate agencies undertake educational programs on the options available to homeowners for reducing yard waste generation, these programs to be supplied through government agencies, nurseries, and landscape companies.

17. That the Ministry of the Environment support the expansion of the Master Composter program.

18. That the provincial government fund

    (a) the research and development of municipal, intermediate-scale, centralized composting demonstration projects;

    (b) the research and development of institutional, on-site composting demonstration projects;

    (c) research into the use of organics, including paper mill sludges, on agricultural lands.

19. That the federal government be urged to fund

    (a) the development of alternative uses for wet wastes that cannot be used for agricultural purposes;

    (b) research into the contamination of organic wastes destined to be used as animal feed;

    (c) research of new and intermediate processing technologies.

(d) research into the composition of paper fibre regarding its applicability as animal bedding and animal feed, with particular emphasis on potential toxic effects.

20. That the provincial government

(a) establish models for predicting material flows and quality of end product;

(b) establish an "end use" strategy for the finished product.

Appendix F

THE GERMAN GREEN DOT SYSTEM

BACKGROUND

In 1990, the German Government introduced legislation designed to force the adoption of **product stewardship** by all companies selling packaged goods in the country, including importers. This legislation was very clearly a "command-and-control" approach, and included such mandatory requirements as the right of consumers to bring empty packages back to the point of purchase (leaving retailers fully responsible for their disposal/ recycling).

Businesses, particularly retailers, were alarmed by this law, and they began working to create an alternative that was acceptable to the government. The result was the creation of Duales System Deutschland (DSD), an industry organization sponsored by the "fillers" (i.e., those who fill packages with their products). These companies are similar to those designated as "brand owners" by WRAC within its Resource Stewardship Model.

Under the current approach, companies can avoid being subject to the terms of the 1990 law if they join DSD. The crucial requirement is a company's guarantee that a given packaging material has a complete and continuing recycling market. If it does, and certain other requirements are met, the package made from the material will be allowed to bear the designated "Green Dot" emblem. This emblem indicates that the packaging contributes to the environmental goal of diversion from landfill and incineration.

A company that does not join DSD faces the following restrictions:

- mandatory deposits on containers for beverages, thinners, and detergents, starting January 1, 1993;

- the banning of all "retail" packaging from municipal solid waste, effective the same date, thereby requiring the retailer selling the packaged product to take back empty containers;

- the banning of "display" packaging from municipal waste, effective April 1, 1992 (the consumer can discard "anti-theft" types of packaging at the cash register, upon purchase, and the retailer must deal with this material in some manner);

- the requirement that manufacturers will take back "transport" packaging from retailers, after goods have been shipped and unpacked. Since December 1, 1991, this material has no longer been accepted as municipal solid waste.

STRUCTURE AND OBJECTIVES

DSD operates much like any private company, but with a large number of "shareholders" (i.e., the brand owners), who pay fees for use of the Green Dot so that the company can perform a variety of services on their behalf.

The primary responsibility of DSD is to provide collection for packaging and to allow the creation of a recycling infrastructure capable of handling all of the packaging sold by its member firms, **outside of the normal municipal infrastructure.** DSD is also responsible for meeting a number of requirements, on a national basis, with respect to the recycling of specific materials. The following is a summary of the key targets and dates:

	by Jan 1, 1993			by June 7, 1995		
Material	Capture Rate	Recovery Rate	Diversion Rate	Capture Rate	Recovery Rate	Diversion Rate
Glass	60%	70%	42%	80%	90%	72%
Ferrous	40%	65%	26%	80%	90%	72%
Aluminium	30%	60%	18%	80%	90%	72%
Paper&Board	30%	30%	9%	80%	80%	64%
Plastics	30%	30%	9%	80%	80%	64%
Composites	20%	30%	6%	80%	80%	64%
			50% overall			68% overall

If these percentages are not met within the given time frame, the exemption from the mandatory deposit will be rescinded.

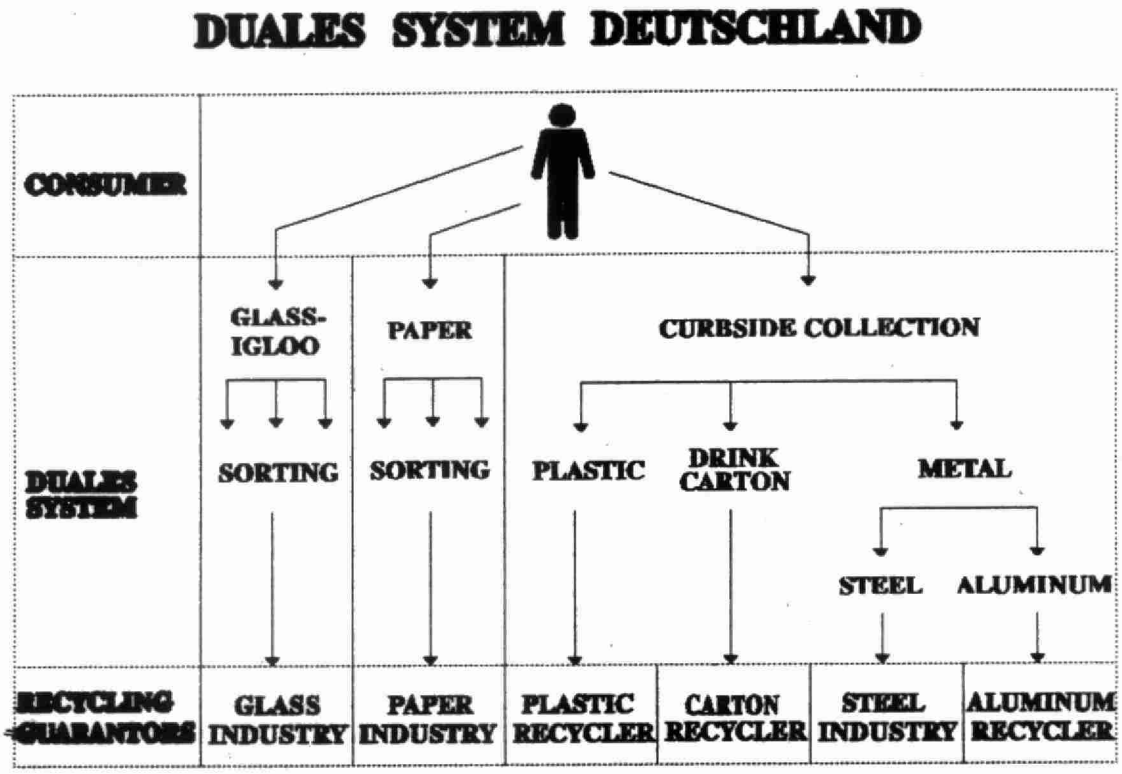
The market share for refillable beverage containers is currently at 72% (i.e., beer, wine, juice, milk, water, soft drinks.) This share will not be allowed to drop below the present percentage; these levels will be monitored yearly. If by June 30, in any particular year, the refillable quotas are not reached, deposits will be introduced in December of that year.

In working to meet these requirements, on behalf of its member companies, DSD has been working to create an infrastructure that can effectively

- promote the reduction of volume of packaging materials used;
- arrange and manage a depot-and-collection system that is convenient for the public at residential area locations and will encompass all the packaging sold by their participants;
- develop educational materials to gain public support and participation;
- insure that retail operations will not be disrupted by deposit-and-return requirements.

PLANS AND PROGRAMS

Throughout 1991 and 1992, DSD has been working on the plans and programs required to meet its objectives.



The following is a summary of the system's key elements:

- Depots are to located in conveniently accessible residential areas.

- DSD will take over all existing collection depots for recyclables from the municipalities.

- The industry will need the support of the municipalities to use central depot locations free of charge and to dispose of contaminated materials from the sorting stations at the landfill.

- Collection, source separation, and recycling guarantees will be required from packaging manufacturers and primary raw material producers through the sector recyclers.

- The source-separated materials are given to the recyclers at no charge (the only cost incurred is the shipping fee). A possible bonus of 100 DM per tonne is under consideration as an incentive to encourage the development of secondary materials markets.

- Administration of contracts and coordination and quality control of waste haulers and sorting stations will be handled by DSD. An Admissions Committee will be formed to review applications for product specifications to participate in the system.

- To acquire the license to use the Green Dot emblem, a package "filler" must submit a description of the packaging material, contents, appearance, size and volume, as well as projected sales for the upcoming 12-month period.

- The Green Dot program attempts to educate consumers on the following major issues concerning packages marked with the emblem:

    - It instructs the consumer not to discard item into waste bin.

    - It signifies that the item will be collected separately.

    - It signifies that the package will be recycled to the respective target rate.

- It certifies that the package is part of the financing of the DSD.

MEMBERSHIP FEES

Members of DSD pay a set fee for each Green Dot that they affix to packages sold in Germany (the fee is not charged for exported items). The Green Dot price structure has been set on a volume or surface area basis, as follows:

0.0	L	-	0.2 L	0.01 DM
0.2	L	-	3.0 L	0.02 DM
3.0	L	-	30.0 L	0.05 DM
>30.0	L			0.20 DM

Negotiations are under way to possibly adjust the fixed rates to variable rates, depending on the difficulty in recycling of the packaging material.

OTHER CONSIDERATIONS

New product groups can be integrated into DSD without differentiating between packaging materials, if retailers cooperate by offering products packaged in "green dotted" packaging only from a given target date. The first product group comprises beverages, detergents, and thinners.

Hazardous wastes should not be collected at the same locations as Green Dot materials. It is suggested that a Red Dot system could be organized by which a Hazardous Waste Mobile would drive through residential areas to collect such wastes.

SUMMARY AND DEFINITIONS

For a package to be exempt from deposit or return requirements in Germany, it has to be returnable, reusable, or recyclable outside of the municipal solid waste management system. The definitions of the different types of packaging, and the specific details of the "backdrop regulations" supporting operation of DSD, are as follows:

- **Transport Packaging.** Drums, containers, crates, sacks, including pallets, cardboard boxes, foamed packaging materials, shrink wrapping, and similar coverings that are component parts of transport packaging and are used to protect goods from damage during transport or for reasons of transport safety. This type of packaging has to be taken back by manufacturers to be recycled or reused. Since December 1, 1991, no such packaging has been accepted at municipal landfills or incinerators.

- **Display Packaging.** Blister packaging plastic sheets, cardboard boxes, or similar packaging intended as additional packaging for the following purposes:

  - to allow goods to be sold on self-service basis;
  - to make more difficult, or prevent, the possibility of theft;
  - to serve for advertising purposes.

  This type of packaging should be removed before the consumer leaves the store or deposited in collection containers provided by the retailer outside the store. Since April 1, 1992, this type of packaging has been banned from the municipal waste stream.

- **Retail Packaging.** Closed or open receptacles and other forms of packaging, such as cups, bags, blister packaging, cans, tins, drums, bottles, metal containers, cardboard and cartons, sacks, trays, and carrier bags that are used by consumers to transport goods or until such goods are consumed. Sales packaging also includes disposable dishes and disposable cutlery.

  Retailers are responsible for taking back any packaging in which they sell goods. This can be accomplished through store returns or collection containers located outside the store. Retail types of packaging are banned from the municipal waste stream from Jan 1, 1993. If

DSD has collection in place, the retailer is not required to take back materials marked with the Green Dot emblem.

- **Mandatory Deposit.** As of January 1, 1993, all beverages, detergents, and thinners require a mandatory deposit of 0.50 DM if they are filled in containers with a volume larger than 0.2 L and are not members of DSD.

THE GREEN DOT SYSTEM AND THE RESOURCE STEWARDSHIP MODEL COMPARED

Prior to developing its Resource Stewardship Model, WRAC considered two other types of models: a public model and a private model. The latter is similar to the German Green Dot System. The "shared" approach incorporated in the Resource Stewardship Model was chosen by members, through a consensus process and for a variety of reasons, as being the preferred approach for Ontario. The following summarizes some of the fundamental differences between the German approach and the approach proposed for Ontario, and the rationale for WRAC's selection of a shared approach over a fully private one.

Both WRAC's Resource Stewardship Model and the German Green Dot system are designed to achieve *product stewardship*. The German system applies to all packaging, the proposed Ontario system to consumable goods, including packaging. Both systems require strong backdrop regulations to bring all industry stakeholders into the system. The degree of responsibility, however, is different between the two systems:

- the Green Dot system places the entire responsibility for diverting materials on brand owners, from collection to processing and marketing;

- the Resource Stewardship Model system proposes that brand owners take over the responsibility for processing and marketing, leaving the collection responsibility with municipalities (thereby creating a shared approach).

While the Green Dot system may be the best model for Germany, WRAC believes that it would not meet Ontario's objectives effectively. Many differences exist between the two jurisdictions. For example, Germany does not have a fully developed source separation and curbside collection system in place; that is, they do not have a Blue Box program. Creating an essentially separate recovery system, such as DSD does, would not be building on the existing Ontario program but would create instead a strong potential for overlap, overall cost increases, and inefficiency. Both municipal and industry members on WRAC have stressed the importance of ongoing municipal involvement in our recycling programs and of promoting a cooperative approach.

Given Ontario's focus on "pushing up the hierarchy", WRAC has placed a high priority on mechanisms that will serve this purpose and that tend to provide clear incentives for source reduction and reuse, as well as support for recovery and recycling of consumer packages and products. Although the internalization of recycling costs does promote source reduction, the Green Dot system places its main emphasis on recycling. No 3Rs planning or commitment to the government is required of brand owners as is proposed for Ontario brand owners. The latter, through their Sector Organizations, would have to produce 3Rs workplans for their products and packages and negotiate source reduction and reuse objectives with the government. Furthermore, the German system does not take into account total environmental impacts. In the Resource Stewardship Model such impacts would have to considered, again through the Sector Organizations' negotiations with government and their submissions of product and package environmental profiles or life-cycle analyses.

Another significant difference is in the use of targets. The German targets are set in regulation. If they are not met by the prescribed date, an alternative system is automatically imposed. The Resource Stewardship Model, on the other hand, proposes a different approach to targets. Under the Shared Approach, if negotiated targets were not met, the government would enter into a "consultative regulation" process with the sector in question. An analysis would be conducted of the data and regulations created that address the specific barriers to meeting and

surpassing the assigned targets. WRAC believes that such a system would be more flexible and responsive to legitimate industry needs, without sacrificing environmental goals.

The Green Dot system does represent a highly direct and simple approach to product stewardship, and has already resulted in the simplifying and rationalizing of packages to facilitate recycling. However, the Resource Stewardship Model tends to go further in addressing incentives and requirements regarding other important matters, such as consumer education, targets for all 3Rs (not just recycling), and a cooperative, balanced approach to both environmental and economic impacts for all sectors in Ontario.

Appendix G

Primer:

Financial Mechanisms for Waste Minimization

April 19, 1991

Prepared for

Waste Reduction Advisory Committee

Prepared by

Resource Integration Systems Limited
Toronto • Hartford • Portland • Los Angeles • Brussels

Primer: Financial Mechanisms for Waste Minimization

Resource Integration Systems Ltd., April 19, 1991

Contents

Introduction

This report is intended to serve members of the Waste Reduction Advisory Committee as a information "primer" on generic options available for using financial mechanisms to drive waste minimization initiatives in the Province of Ontario.

The report provides general background information on the roles and functions of funding options, and the criteria that can be used in evaluating options for Ontario.

This is followed by a brief description of the major funding mechanisms available, along with examples from other jurisdictions and a summary of some of the "pros" and "cons" commonly associated with each measure.

This primer is considered neither definitive nor comprehensive. Rather, it is designed to help ensure that all WRAC members share a common base of information for consideration during the upcoming Think Tank on April 24-26. Supplementary information will be presented at that time, and Committee members will have opportunities to discuss and raise questions concerning any of the points raised in this document.

Background

The Functions of Funding Options

Many of the waste minimization funding options currently under discussion have the potential to serve several distinct functions. These functions can be categorized as follows:

1. Economic System Adjustments

Our economy is structured in such a way that the impact of most economic activity on the natural environment is "externalized". In other words, the cost of environmental damage, including that associated with the disposal of solid waste, is not incorporated into the prices of goods and services. As long as this structure persists, there will be little or no economic incentive to reduce waste and the associated environmental impact. Improper or incomplete accounting of the impact of waste provides a powerful incentive for the economy to perform in a wasteful manner.

Some of the funding options outlined below, if implemented in Ontario, would have the effect of causing the economy to adjust to "internalize" certain environmental costs. Examples include a virgin materials levy, which would force the internalization of some of the costs associated with the use of primary resources, and landfill tipping fee surcharges, which would seek to incorporate fully costed disposal impacts into the price of disposal.

It is impossible in practice to introduce changes which will lead to an immediate, full and fair internalization of waste management costs across the economy. The multitude of transactions in the economy are far too complex and, in most cases, the environmental impacts are far too poorly understood to be priced accurately. Therefore, adjustments under consideration today must be viewed as incremental steps toward an environmentally sound economy that is appropriate for Ontario.

2. Behaviour Change

It is possible for various funding options to incorporate an economic incentive/disincentive which encourages/discourages certain types of waste management behaviour. For example, a "virgin materials tax" is designed in theory to discourage the consumption of primary materials by industry and to encourage substitution with secondary materials.

This function raises a number of questions and uncertainties, since it is often difficult to predict the exact type and level of economic incentive/disincentive required to stimulate a substantive behaviour change. This is particularly true in the waste minimization field, since practical experience with funding options is limited. However, experience from other sectors indicates that the potential for behaviour change is high in certain circumstances, and that this function warrants careful consideration.

3. Funding Waste Management Programs

A third basic function is the collection of monies for the purposes of funding the implementation of waste minimization programs. This could include the capitalization of infrastructure, and the operation of programs.

There are many possible ways for this transfer of funds to occur. In its simplest form, a municipality can raise funds through, for example, a tipping fee surcharge, and use these funds in local waste minimization programs. In more elaborate systems, it is possible, for example, to apply various taxation measures to broad sectors of the economy, and to retain the monies collected in a special fund for distribution through grant and loan programs to private and/or public sector waste minimization activities.

In all cases, a critical consideration is the degree to which the funds raised are spent effectively on programs that support the waste minimization goals, objectives and plans of the jurisdiction.

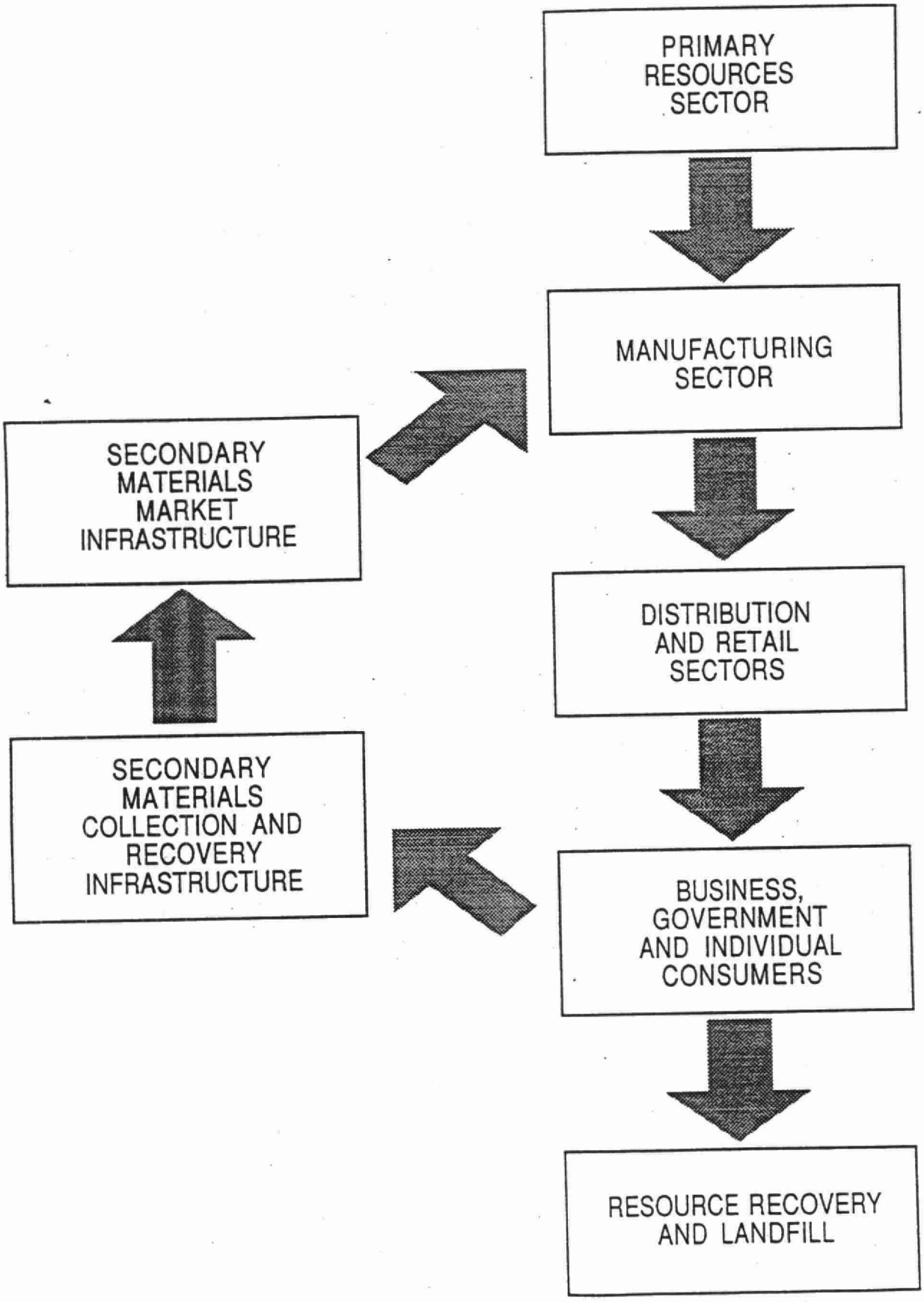
Funding Options and the Flow of Materials in the Economy

The "simplified material flow" shown in the attached diagram represents the flow of materials through various "sectors" of the economy, from primary resource extraction, through the various stages of manufacturing, distribution and consumption, and finally to disposal as waste in landfill and resource recovery facilities. A recycling loop is shown to represent those materials that are recovered from consumers and processed for reuse in the manufacturing sector.

Each stage in the material flow represents a transaction point, where materials are exchanged in some form. It is at these points that funds for waste minimization purposes can be collected or expended. It is important to recognize that this process of collection and expenditure can occur internally as a self-imposed action by any of the individuals or organizations involved in the material flow. A private company, for example, can decide simply to levy funds from its own revenue base and allocate those funds toward the minimization of its own waste. Alternatively, transactions can involve many players, and may be imposed by external agents, as is the case when a government imposes a tax on various sectors of industry.

This simplified material flow can be used to assist in categorizing and evaluating funding options. Those options which are applied at the top of the material flow (i.e. at the level of primary materials input), such as virgin materials levies, will tend to *cut across broad categories of economic activity*. There are opportunities at this level to effect significant structural change in an economy that currently favours large scale primary resource consumption. At the bottom of the material flow (i.e. at the level of waste disposal), the options applied address very different, but equally fundamental issues. Here measures tend to *cut across broad categories of waste*. There are opportunities to ensure that the principles of full cost accounting and user pay are applied, and a failure to do so may undermine the effectiveness of other funding options applied elsewhere in the material flow. Finally, there are a wide range of funding options available for application at manufacturing, distribution and consumption stages. Very broad or very narrow categories of products or materials may be addressed and effectiveness in terms of system adjustment, behaviour change and fund raising may vary widely.

SIMPLIFIED MATERIAL FLOW



Selection Criteria

In any jurisdiction, it is likely that a mix of appropriate funding mechanisms will be required. In this regard, it is essential that funding mechanisms are selected in the context of the overall waste minimization plan. It is also essential that all funding mechanisms satisfy certain overriding public policy concerns. For example, no mechanism should directly or indirectly jeopardize public health and safety. In addition, there are criteria that can be used to help select *preferred* options among acceptable alternatives, and a number of these are outlined below. Again, it is unlikely that any one option will meet all criteria in a satisfactory manner; a mix of options will be needed.

Does the mechanism promote behaviour change?

- Costs should not simply be passed along to consumers and absorbed into existing practices, resulting in no substantive change in waste management behaviour.

- It is important to consider who's behaviour will be changed. Changes in the purchasing practices of major industries may have a much greater impact on the provinces waste generation than changes in household purchasing practices.

- In general, the mechanism should support the waste management hierarchy by encouraging action on the 3 R's in a self-reinforcing, sustainable manner. Different measures may support different levels of the hierarchy, so it is important to consider the combined effect of a preferred "package" of measures.

Does the measure provide dedicated funds for waste management purposes?

- To the extent possible, funds should be used exclusively for 3 R's measures, rather than be allowed to flow into general revenues.

- Ideally, this criteria can be refined further to stipulate that funds raised from specific materials or products are used only for measures that deal with those items.

Is the mechanism non-restrictive?

- The proposed mechanism should not constitute an undue impediment to current economic practices, including interprovincial and international trade, or result in changes which in turn lead to less effective waste management practices.

Is the mechanism non-discriminatory?

- The mechanism should allow for freedom of consumer choice in the selection and access to goods and services, so long as the user pays a fair price for managing the wastes which result from these choices.

- Ideally, the mechanism should treat equitably all materials and products, all economic sectors, and all competing companies within sectors.

Is the revenue generated proportionate to waste management requirements?

- The monies raised by the mechanism should be sufficient to support the implementation and maintenance of the waste minimization measures being proposed. At the same time, the mechanism should not become an attractive revenue source for other government needs and programs.

- In general, costs to the consumer in the form of price increases or participation costs should be minimized.

Can the mechanism be implemented efficiently?

- Careful consideration should be given to the costs and difficulties associated with administration and compliance with any new mechanism.

Is the mechanism adaptable?

- The mechanism should be adaptable to allow for refinements as new information concerning the costs of managing various products and materials as waste becomes available

Summary of Funding Options

Generic funding mechanisms are described below. Examples, along with some of the most commonly cited "pros" and "cons" are highlighted.

The descriptions that follow do not pre-suppose that implementation of funding options is achieved either through voluntary or mandatory means. In fact, a number of implementation options are available in each case, including mandatory, mandatory with exemptions, mandatory only after failure to achieve a pre-determined performance target or objective, and voluntary.

Virgin Materials Levy

The basis of this mechanism is a levy, tax or fee imposed on the flow of materials at the first level of processing performed within a jurisdiction, and on all imported materials. As discussed to date, a virgin materials levy would be applied on a per ton basis, and paid by those companies within the jurisdiction that consume primary materials, either extracted locally or imported.

It is possible to structure a rebate or credit for secondary materials substitution. It is also possible to include a rebate for materials and products which are exported, in order to maintain the competitive position of industries located within the jurisdiction.

The proceeds from a virgin materials levy can simply be used as general revenues. Alternatively, they can be deposited into a special fund, which is then used to pay for the development of waste minimization infrastructure. The latter approach has been advocated by most proponents of levies at the primary materials level.

It is important to note that this mechanism is closely related to measures which would remove existing subsidies to primary materials extraction and consumption. Examples include government forest concessions awarded to logging interests at costs which do not fully compensate for environmental impacts, or subsidized energy rates for primary materials

industries. Some analysts advocate correcting these distortions before new taxes or levies are introduced.

Examples

Perhaps the most well-known example of a proposal for a virgin materials levy is Bill HR3737, which was introduced into the U.S. House of Representatives in 1990, but failed to pass. The Bill proposed a $7.50 per ton fee imposed on all primary materials used in the production of paper, paperboard, glass containers, aluminum sheet, plastic, batteries and other products. It stipulated that a special fund would be established for distribution to states to assist in financing the implementation of solid waste management plans.

A voluntary virgin materials levy is also being proposed by major industries in Europe for application at a national level.

Pros

This measure therefore has the potential, in theory, to encourage efficiency in primary materials utilization, and to stimulate the rapid expansion of recycling programs and markets for secondary materials.

As an instrument implemented at the level of primary materials consumption, this mechanism has the potential to address a broad range of economic activity in a non-discriminatory manner.

Provided that the funds raised by a virgin materials levy are used for waste management purposes, this measure represents a significant tool for internalizing costs which are currently externalized.

Cons

It is extremely difficult to determine the size of levy that is required to stimulate change, particularly since the virgin materials levy concept remains untested in practice.

Also, this measure may raise concerns related to cross-border trade with other jurisdictions.

A virgin materials levy cannot be implemented by Ontario, in isolation from other provinces. Implementation would require coordination through CCME and possibly other fora.

Gross Receipts Taxes

In this case a tax or levy is applied to the price paid for goods and services sold within a jurisdiction. A gross receipts tax can be applied at a single "level," such as retail. Or it is possible to extend this approach to an *ad valorem* tax applied through the entire production, distribution and disposal system.

A gross receipts tax may also be applied to an assessment of property, net worth or corporate income taxes, rather than gross revenue.

Examples

A gross receipts tax is one of the funding mechanisms introduced in the State of Wisconsin as part of comprehensive recycling legislation (Senate Bill 300) passed in March, 1990. The fee applies to sales within the state and must be paid by businesses with gross receipts in excess of $1 million. Fees collected will be used to fund local recycling programs. The intent of the legislators is to reduce the fee over the first two fiscal years of program implementation, while alternative funding mechanisms are developed.

The "litter taxes" which have been implemented in some states are essentially gross receipts taxes. For example, the State of Washington taxes wholesalers and retailers of all products found in litter. The proceeds are used to fund recovery and recycling initiatives.

Pros

An advantage of this approach is that it is relatively easy to administer; calculation and collection can be simple relative to other options.

It is also possible to apply this measure to a wide range of waste generators in a manner that is equitable, at least in terms of business size.

Cons

The most commonly cited objection to this approach is that it makes no attempt to reconcile that fact that there is no direct correlation between the price paid for a product and the amount of waste generated. Consequently, a gross receipts tax can be viewed as an effective fund raiser, but it is questionable whether it can in itself be used to effect changes in waste management behaviour. Such behaviour changes may only be achievable indirectly by the way in which the funds are spent (e.g. to operate municipal recycling/composting programs)

Unit Charges

The basis of this approach is the collection of a fee or tax applied per unit of product sold in the jurisdiction.

A unit charge is simply a fixed fee – say 1¢ – per unit of product sold at the retail, wholesale or producer level. The fees collected are used to fund waste minimization initiatives. It is possible to "exempt" certain product categories or industries from the unit charge if certain established recycling/reduction targets or goals are achieved.

Examples

A unit charge is included in Florida's 1988 Solid Waste Act, where it is known as an "advanced disposal fee" (ADF). The Act calls for a 1¢ per unit fee to be applied to a broad range of common consumer packages, with the fees collected used for waste management activities in the State. The fee is refundable to consumers who return used packages. An exemption is permitted for packages made of materials that have achieved a demonstrated 50 per cent recycling rate. In addition, the fee is scheduled to increase according to a pre-set schedule if recycling targets are not achieved. This mechanism has not yet been implemented.

An advanced disposal fee system is currently being given careful consideration in California as part of a major study to be presented to the state legislature this year.

In many jurisdictions throughout North America, unit charges have been applied to specific products or packages considered "special wastes". In British Columbia, for example, fees of $5 per lead acid battery and $3 per tire sold in the province have been imposed.

The German "Dual System" incorporates a form of unit charge. In this case, industries producing a wide range of products and packages will pay a unit-based levy into an industry-operated fund for the purposes of developing waste management systems.

Pros

This approach attempts to incorporate waste management costs into products and packages, and make those costs visible to consumers.

A unit charge may be applied to broad categories of product in order to encourage an "even playing field".

It is possible in theory for this measure to stimulate recycling if an exemption for recycling design or performance provides a sufficient incentive to encourage action.

Côns

As a flat fee per unit, this technique does not recognize differences in the relative waste management impact of various products and packages.

Since there is no demonstrated experience with this approach, it is uncertain whether a levy can be imposed which is large enough to encourage behaviour change.

This approach raises potential administrative complexities.

Variable Unit Charges

This mechanism differs from the unit charge (i.e. a flat fee applied on a per unit basis) in that it attempts to recognize the relative waste management impact (or the relative recyclability/reusability) of different products.

The particular version of the variable unit charge concept that has been promoted most widely to date is the application of different per unit charges, depending upon whether a product is recyclable by design, contains recycled material, or is recycled within the jurisdiction at a pre-determined recycling rate.

Examples

There have been more than 20 attempts to institute variable unit charges in the United States, but none have yet been successful.

One example of a variable unit charge proposal was introduced in Massachusetts but failed to become law. House Bill 1172 proposed a system in which a fee of 2¢ would be imposed on every unit of packaging which is not made of recycled material, and a fee of 1¢ on every unit that is not recyclable. Fees would be waived for units that are made from secondary materials *and* recyclable.

Pros

In theory, the variable unit charge has the advantages which are similar to those of the unit charge: It attempts to incorporate waste management costs into produce prices, and it makes those costs visible. It also can be applied across broad categories of products and/or packages.

Beyond this, and again in theory, the variable unit charge offers the added advantage of reflecting relative waste management costs. A larger fee is imposed upon those products/packages which are perceived to be more difficult to manage as waste.

In theory, a variable unit charge system can be used to promote the waste management hierarchy.

Cons

There is as yet no clear scientific or legal basis for establishing the relative waste management costs and benefits of various categories of products and packages, and therefore no clear basis for determining the differentials among variable unit charges. Similarly, with no history of practical experience, it is not possible to determine how high the charges must be to stimulate behaviour changes.

It is also likely that the application of a variable unit charge system in practice will involve significant administrative complexities.

Deposit/Return System

In this system a deposit is charged on a product at the point of purchase. The deposit amount is returned to the consumer when the used product or package is returned to the retailer or to a designated redemption centre. It is possible to implement a partial deposit system, in which only a portion of the deposit is refunded to the consumer; the remaining portion is retained for management of the used product or package as waste.

Unredeemed deposits (those deposits that remain unclaimed by consumers) can theoretically be retained in a fund and used to pay for waste management initiatives.

Examples

Traditionally, deposits have been applied to soft drink and beer containers. Most provinces, including Ontario, have some form of deposit system in place for selected beverage containers, as do nine U.S. states.

Numerous jurisdictions have applied deposit systems to certain products which are considered to be special waste items. Common examples of these items include lead acid batteries, tires and products or packages designated as household hazardous wastes.

Debates are currently underway in a number of jurisdictions concerning possible expansion of deposit systems to include the broadest possible range of beverage containers, and possibly other types of packaging as well. Beginning in December 1990, the deposit system in the State of Maine was expanded to include containers for all beverage except milk, with return expected through independent depot operations.

Pros

High recovery rates for beverage container materials have been demonstrated in those jurisdictions with deposit/return systems in place.

The deposit/return approach directly addresses the issue of industry stewardship for products and packages, and forces at least those industries involved to incorporate the costs of waste

management in product prices. This method represents a selective application of the "user pay" principle, since product consumers assume the full burden for waste management costs, in proportion to the amount of waste generated.

Deposit/return systems have also been proven effective in reducing litter resulting from those packages covered by the deposit system.

Cons

It is difficult to expand deposit systems beyond selected products and packages, such as beverage containers, batteries and other special wastes. The products and packages that have been addressed successfully by deposit return systems to date represent a very small proportion of the waste stream by weight and volume. With this in mind, it is also important to note that deposit systems may compete with more comprehensive recovery systems for material revenue.

There are difficulties associated with handling large volumes of used packages or products in retail stores, particularly if the items returned are classified as hazardous waste. These problems may be avoided if a separate network of redemption centres is established, but these networks tend to be costly and inefficient.

A basic contradiction is inherent in the design of conventional deposit/return systems, in that high recovery rates reduce unredeemed deposits and therefore the viability of the system unless additional funding is secured from other sources.

User Pay Charges

Waste generators in the I/C/I sectors are generally charged for waste collection and disposal services in proportion to the amount of waste they produce. User pay charges are already in place in such cases.

The same principle can be applied to the residential sector by implementing a system for charging householders according to the number of cans or bags placed at the curb for collection. Many techniques for residential user pay charges are possible. Residents can select from various levels of collection service offered at differing rates. Alternatively, collection can be restricted to waste in special bags (or marked by special stickers) which must be purchased by residents with proceeds forwarded to municipalities for waste minimization purposes.

Examples

The City of Seattle operates one of the most well known residential user pay systems. Residents are charged on a monthly basis, according to the level of service they choose. Weekly curbside collection of a 19-gallon can costs $10.70 per month, while a 30-gallon can costs $13.75 and each additional can costs $9. This system is operated in conjunction with recycling and composting programs, so that householders have an incentive to waste less and recycle more, along with opportunities for alternative action.

Here in Ontario the City of Peterborough has passed a Council Resolution to adopt a user pay system for the residential sector.

Pros

User pay charges play a fundamental role in waste management economics, since they ensure that collection and disposal costs are visible to waste generators, and that they are borne in proportion to the amount of waste generated. A basic economic incentive to reduce waste is therefore put in place.

Cons

User pay charges may discriminate against low income/large household generators. They also involve some additional administrative complexity. In addition, user pay systems are often criticized on the grounds that they promote illegal dumping.

Taxes on Waste Management Services

A tax or surcharge may be applied to all fees paid for waste management services in order to raise funds, while simultaneously increasing the economic disincentive to dispose of waste.

This method applies readily to private waste management services which operate primarily in the I/C/I sectors. Municipal waste management services could be "taxed" on the basis of full cost accounting methods adopted by the province.

Examples

Minnesota imposes a tax of 6 per cent on garbage collection services. Washington imposes a similar tax of 1 per cent, but it is restricted to residential collection only.

Pros

A tax on waste management services is linked in some proportion to the amount of waste generated. It has the potential to stimulate waste reduction activity across a wide range of waste generators.

Cons

In practice, it maybe very difficult to administer fairly both private and public sector waste management systems.

This measure is one of the most "invisible" options, and therefore disadvantaged in terms of the capacity to induce change.

Tipping Fee Surcharges/Variable Tipping Fees

Tipping Fee Surcharges typically involve a surcharge or levy that is applied on a per ton basis to all wastes delivered to landfill sites and waste-to-energy plants, and/or other waste handling facilities. The funds collected are used to pay for waste minimization activities, and the additional costs serve to discourage waste generation.

It is also possible to establish variable fees at waste recovery, processing and disposal facilities, based on the particular kinds of wastes contained in a particular load and/or the extent to which waste has been source separated. Such variable fees can encourage source separation and recycling, while supporting the efficiency of waste management operations.

Examples

Tipping fee surcharges are a widely used funding mechanism. For example, at least 13 states now have surcharges in place. As of mid-1990, the amount of the surcharge varied from $0.25 per ton (California) to $6 per ton (Vermont). In all cases at least part of the funds collected were used to pay for recycling programs.

Pros

Tipping fee surcharges provide an economic incentive to reduce wastes, potentially across a wide range of the solid waste stream. This measure is non-discriminatory by material or product type.

Cons

This system implies a need for weigh scales, which are not available in all communities.

This mechanism operates at the disposal end of the waste system and would be normally administered by municipalities, who have a very limited capability to influence "upstream" decisions, such as product design and selection, that effect the type and quantity of waste generated.

The application of surcharges to public systems may create opportunities for private operators to generate windfall profits, unless compensating measures are also taken.

Inequities among municipal jurisdictions may arise if surcharges are retained at by the province and distributed throughout the province in a manner that is not proportionate to the amounts raised.

This measure has been criticized for encouraging illegal dumping of waste.

Summary

This primer has attempted to highlight key information required for defining and evaluating the financial mechanisms that might potentially be used to stimulate progress toward Ontario's waste minimization objectives.

In summary, a number of key points should be kept in mind throughout any process by which various financial mechanisms are compared and evaluated.

First, it is important to view options within the context of the flow of materials in the economy. As noted, some options, such as virgin materials levies, are applied at the "front end" of the material flow where primary material inputs are introduced. Such measures tend to cut across broad categories of economic activity and have the potential to effect significant economic change. At the opposite or "back end" of the material flow where waste is managed, an entirely different set of measures apply. These include such options as tipping fee surcharges and waste management service taxes that tend to cut across broad sectors of the waste stream. The potential also exists here to effect fundamental economic change, but in a much different manner. In the "middle" of the material flow a variety of measures may be applied which have the potential to encourage changes in material use, product design, and product selection, while at the same time raising funds to pay for a virtually limitless variety of waste minimization activities.

Second, it is important to recognize the ways in which measures differ in terms of their ability to perform various specific functions. For example, many possible funding options address the important function of behaviour change, but the type of behaviour change which is encouraged may vary widely, and in some cases change will be restricted to a particular sector of the economy. For example, a user pay system in the residential sector may encourage backyard composting the application of a range of household source reduction measures. A unit charge on packaging with exemptions for recyclability may encourage industries to change product and package designs.

Third, a critical consideration is the degree to which each option, when applied in the Ontario context, will support the province's commitment to waste minimization. Funding options cannot be adequately evaluated without consideration of the specific tasks they are intended to support.

Finally, it has been noted at several points throughout this document that no single option will satisfy all of the economic priorities related to waste minimization; a package of options will be required. Those options applied and the front and back ends of the economic system have the greatest potential to encourage sustainable waste minimization and long term economic change. Other measures may provide critical interim functions, including program funding, while providing direct support to a variety of specific 3 R's measures. Through careful consideration of the relative attributes of each option, it will be possible to determine the best possible blend of financial mechanisms for Ontario.

OVERVIEW, OBJECTIVE AND PLANNING PRINCIPLES
A LONG-TERM WASTE REDUCTION PLAN FOR ONTARIO

OVERVIEW

April 25, 1991

The Present

In Ontario, we misuse resources and create too much waste.

In producing consumer goods, we produce garbage, and after using the goods, we throw them away. Currently, it seems easier to make new goods rather than to reuse or recycle what we already have. We continually drain the earth of limited resources while producing even more goods to throw away. Sadly, we do this at a greater rate than almost anywhere else in the world.

The results of our wasteful practices have become all too obvious:

> We are converting natural resources into mountains of garbage.
>
> We are fouling the natural environment.
>
> We are diminishing the quality of life and threatening the earth's survival.

The problems we have created for ourselves are enormous; they must now be urgently solved.

The Future

We must use the earth's resources wisely.

We must change our thinking as to what is considered "waste" in the first place.

We all must adopt practices that are conserving and sensitive to the environment.

We must reduce, reuse, and recycle whenever and whatever we can. A change in our thinking is required.

We must conserve resources and harvest wastes. At present, we harvest resources and manage wastes, mainly through disposal.

We must take whatever we cannot harvest and dispose of it wisely without harm to the environment.

The goal is to waste nothing at all.

OBJECTIVE

An Ontario waste reduction action plan must ensure that, at the very least, 50% of Ontario's solid waste is diverted from disposal by the year 2000. Success in this regard should be measured against the base year of 1987 for residential, as well as wastes from industrial-commercial-institutional (ICI) sources.

In meeting this objective, the primary emphasis must be placed on making those societal changes that effect the highest impact on waste reduction, reuse, and recycling.

PLANNING PRINCIPLES

There are important principles that must govern our actions with respect to waste reduction and resource management in Ontario. By clearly defining our planning principles, we can serve to define "the rules of the game." All sectors will be better able to understand their roles and responsibilities if they understand the rules. The practice of "stewardship of resources" should, through these planning principles, be woven into the very fabric of society, for only when this occurs will Ontario be able to effect the necessary changes to protect the earth's resources in a truly sustainable way.

In defining the rules, we should recognize that there may be exceptions encountered, as Ontario moves through its planning process. This will require the establishment of mechanisms to resolve necessary departures from the basic rules.

1. A Fair And Reasonable Approach

All steps taken to achieve the objectives should, on one hand, be fair and reasonable for all sectors. On the other hand, no business, individual, or institution should avoid its share of responsibility.

2. Voluntary Versus Mandatory Action

Voluntary co-operation between governments and the private sector is preferred if matched with the responsible participation of companies and truly realistic waste reduction opportunities. Regulations and other firm actions should be applied only when necessary to ensure that the objectives are achieved.

3. The 3Rs Hierarchy

The hierarchy of source reduction, reuse, and recycling is endorsed and, normally, priority will be given to promoting this hierarchy. However, in some situations, it may be environmentally better to promote recycling to conserve resources rather than to promote source reduction.

4. Direct/Indirect Payment

Direct payment for costs associated with 3Rs programs is preferable to indirect payment. No sector should, however, be required to pay for actions over which they have no effective control.

5. Responsibility/Authority Linkage

No sector should be held responsible for any component of Ontario's 3Rs program without being given the authority to effectively control the manner in which it fulfils its responsibilities. Each sector that is responsible for participating in new programs should be empowered to guide its waste reduction and recycling actions.

6. A Level Playing Field

The rules must treat equally all those affected: domestic and foreign products and services; small and large companies; individuals in all areas of the province; each and every one who holds some responsibility for making waste.

7. Ease Of Implementation

As speed is of the essence, consideration should be given to choosing options that can be readily implemented. Any options chosen, however, must be consistent with the other planning principles outlined and in keeping with long-term objectives.

WASTE REDUCTION ADVISORY COMMITTEE MEMBERSHIP

Ms. J. Wendy Cook, Chairperson

Mr. T. Klein Beernink	Ontario Environmental Network
Mr. D. Birkby	Plax Incorporated
Mr. M. Bloomfield	The Harmony Foundation
Mr. D. Buggeln	Regional Municipality of Waterloo
Mr. D. Bury	Region of Ottawa-Carleton
Ms. C. Cirko	Resource Integration Systems Ltd.
Ms. N. Crawford	Ontario Waste Management Association
Mr. B. Cook	Laidlaw Waste Systems Ltd.
Ms. G. Discepolo	Halton's Recycled Resources Ltd.
Mr. B. Flemington	OMMRI: Corporations in Support of Recycling
Mr. J. Hanson	Recycling Council of Ontario
Ms. M. Shaughnessy Kitts	McDonald's Restaurants of Canada Limited
Mr. B. McClay	Canadian Pulp & Paper Association
Mr. A. McKichan	Retail Council of Canada
Ms. J. Mitchell	Councillor, Region of Halton
Mr. B. Nelson	Atlantic Packaging Products Ltd.
Mr. J. Rosen	Rosen Industries
Mr. P. Taylor	Compost Management
Mr. P. Wong	Mayor of Sudbury

Appendix H

GLOSSARY

Backdrop regulations:

Regulations put in place by the Province of Ontario which serve the dual purpose of bringing firms into the voluntary negotiation process and of levelling the playing field for those firms that do not take the voluntary route.

Brand Owner:

A firm that has the legal right to the use of a name for a product for purposes of selling it. In this report, the term "brand owner" is used synonymously with the term "Producers", although some brand owners may be importers or distributors and not Producers in the strict sense of the word.

Functional Split:

The division by function of recycling responsibilities for designated dry residential and dry IC&I wastes between generators and producers. Generators would be responsible for bringing the designated recyclable materials to material recovery facilities. Producers would be responsible for the cost of all activities necessary beyond this point, including processing, marketing, and market development.

Generator:

Any individual or organization that is responsible for putting a material into the waste stream or disposing of it. For the residential waste stream, under this Model, the municipality would assume the responsibility on behalf of individual households, as this responsibility can be transferred back to householders via user fees.

IC&I Generators:

Refers to industrial facilities (e.g., factories), commercial operations (e.g., retail outlets, office buidings), and institutions (e.g., hospitals, schools) as waste generators.

IFO:

An industry funding organization financed by producers of products and users of packaging. An IFO would pay a "fee for service" to each of a network of designated material recovery facilities (MRFs) for the processing and marketing of the IFO members' products and packages.

MOU:

A Memorandum of Understanding is an agreement reached between the IFO or a specific industry sector and the Ontario Ministry of the Environment. Under the Resource Stewardship Model the MOU with Sector Organizations (SOs) would spell out mutually agreed upon expectations of both parties regarding the reduction and reuse accomplishments for that sector, and the MOU with the IFO would include generic, cross-sectoral waste diversion targets.

MRF:

A material recovery facility which separates and processes dry secondary materials from municipal and/or I/C/I sources.

Organic Wastes:

"Organo-biodegradable matter", that is, primarily cellulosic or of animal origin. Excluded from this definition are transformed organic (carbonaceous) materials such as petroleum by-products (e.g., plastics). Organic wastes are generated everywhere and in great variety by homes, businesses, institutions, and industries, as well as along tree-lined streets and in parks.

Private haulers:

Private companies involved in the transportation of mixed solid waste and segregated secondary materials from the point of generation to a recycling or composting facility, a transfer station, or to disposal.

Producer:

Any firm that manufactures, uses, distributes, or imports products and/or packages. In most cases, a company that is in the manufacturing business will, as a secondary function, also be a generator of wastes.

Product Stewardship:

The responsibility of producers for the minimization of solid waste, and other environmental impacts, of the products/packages that they sell. This would include some financial responsibility for the environmental impacts from "cradle to cradle".

Recyclable:

Used in this report, recyclable indicates an item that is "practically" and "economically" recyclable. This assumes that a collection program, other material handling and recovery components, and final markets are all in place. It also assumes that a producer, a generator, or a government agency (or combination) is willing to pay the cost of ensuring that the item is, in fact, recycled.

Residential Dry:

A commonly used term for solid wastes generated by households, other than those which are suitable for inclusion in a composting program or those which are defined as hazardous wastes. There are some grey areas. For example, newspapers are commonly assumed to be a "dry, recyclable material", even though they could theoretically be included in a composting program.

Resource Stewardship:

The acceptance of responsibility for resource and energy conservation, and secondary resource management, by those who benefit from the use of those resources.

Secondary Resources:

Products and packages which have served the original purpose for which they were intended and which are generated as materials for some secondary use rather than as wastes.

Sector:

Indicates a grouping or categorization of companies (or even institutions, such as governments or schools) that have some distinct commonality. In the Model a sector refers to companies that produce, distribute or sell a particular type of product.

SO:

Sector Organization. The Resource Stewardship Model proposes that each producer included in the backdrop regulation(s) for the Shared Approach be required to join in an association with others who produce similar products or packages to negotiate an MOU with the provincial government. The focus of the SO and its MOU would be source reduction and reuse activities for the sector, as distinct from recycling responsibilities carried out through the IFO. Sectors would self-select; that is, the government would not require a firm to join any specific organization.

Source Separation: The segregation of products, packages and/or materials from mixed refuse at their point of generation for reuse or recycling purposes. The degree of source separation required in any program varies according to processing technologies and markets.

Target:

In this report, a target is both a "goal" and an "indicator". Targets would both motivate a sector to fulfil the terms of their MOUs, and would indicate to government when and where the voluntary system is failing. Examples of targets could include: minimum post consumer waste content in products; percentage of a particular material to be recovered and recycled in a given time period.

3Rs Hierarchy:

An order of preference for waste management options: reduction of solid waste at the source; reuse of a product or package; recycling into a new form in some manufacturing process including composting.

Tipping Fee:

The charge levied at the point of disposal - or, in some cases, at an intermediate point such as a transfer station - usually on a per tonne basis. A "tipping fee" can also be levied at a recycling and/or composting facility, although this is not as common a usage as the disposal fee example.

True Cost Accounting: The collection and reporting of all of the costs associated with the provision of secondary resource and waste management services

True Costs: For waste management, true costs would include all the capital and operating costs net of revenue associated with secondary resource and waste management services, and including future costs.

User-Fee Systems:

A mechanism by which householders are charged directly, on a true-cost accounting basis, for the wastes, recyclables and compostables that they place at curbside for collection.

User of Packaging:

For the purposes of the Shared Model, a user of packaging is any firm that fills a package with a product for the purpose of selling that product.

User Pay:

A term that means that the waste management cost of a product or package is borne by the user of the product or package. The cost can be included in the shelf price of the item or in the cost of collection or disposal.

Variable Unit Charge (VUC):

A fee per unit produced applied to individual firms by the IFO. The level of the charge would vary according to the 3Rs hierarchy, with reusable items carrying the smallest charge, and disposable items the highest.

Variable User Fee (VUF):

A user fee for residential generators that varies according to waste management impact; with fees for wastes going to disposal more than fees for secondary materials being recycled.

Appendix I

SUMMARY OF WRAC'S RESPONSES TO MOE INITIATIVES AND MMA DISCUSSION PAPERS

MOE Initiatives Paper No. 1, Regulatory Measures to Achieve Ontario's Waste Reduction Targets

In its response to the Paper, WRAC suggested that the intended permit-by-rule approval mechanism be modified to specify excluded materials rather than those allowed and that reference to methods of co-mingling be excluded to further expedite development of appropriate collection technologies. Similarly, it cited the choice of terminology for the description of classified material types as being restrictive, suggesting it should be expanded to encompass material categories instead (e.g., plastics instead of PET).

Regarding the classification of IC&I waste generators, WRAC recommended that the list be expanded to include provincial, municipal, and transportation facilities. Regarding composting, WRAC recommended that food waste be included within types of organic waste that may be included in a composting operation. WRAC also suggested that composting site requirements were overly stringent and required clarification.

MOE Initiatives Paper No. 2, Waste Management Planning in Ontario

While the Paper included many useful recommendations to improve the existing process and methodology of waste management planning, WRAC concluded that a number of concerns fundamental to the development of an efficient and financially sustainable waste and resource management system had not been addressed.

A fundamental concern of WRAC is the correlation of authority and responsibility for waste and waste management planning within the planning process. In order to correct the current division of responsibility from authority, the private sector must participate in the waste and resource management planning process as it applies to private-sector activities.

An additional consequence of the division of authority and responsibility is lack of integration of "up-stream" waste and resource-generating activities such as product and system redesign, use of recovered resources, market research, and development into waste management planning. This could also be addressed through the involvement of the private sector in waste management planning.

Other concerns raised by the Paper included the separation of planning and development for 3Rs activities from planning and development of disposal, the need for meaningful public consultation beginning early in the process for both 3Rs and disposal planning and development, and the need for legislative integration of waste management planning and environmental assessment review to ensure comparable approval criteria. WRAC also questioned the use of Ministry funds and municipal taxes as financial support mechanisms for 3Rs programs and suggested that alternative financially sustainable systems must be identified and implemented.

WRAC's particular recommendations regarding the Paper's contents were as follows:

1. That revisions to the waste management planning process be based on the philosophy that authority and responsibility must correspond.

2. That planning and development for 3Rs activities be separated from planning and development for disposal.

3. That meaningful public consultation, beginning early in the process, be required for both 3Rs and disposal planning and development.

4. That waste management planning and environmental assessment review be integrated through legislation to ensure comparable criteria for approval.

5. That standardized planning models for communities of similar size and attributes be developed in order to prevent unnecessary duplication of costly comparative studies.

6. That the scope of the planning process be expanded to include "up-stream" waste and resource-generating activities such as product and system redesign, use of recovered resources, market research and development.

7. That the private sector be included in the waste and resource management planning process in consideration of the activities that remain within the private sector but that are part of the planning process.

8. That the involvement of the private sector in waste and resource management planning occur early in the process, as outlined in "Figure 1, Revised Waste Management Systems Planning Process".

9. That the private sector be included in all aspects of waste and resource management planning that pertain to waste generation and recovery of resources within the IC&I sector, including identification of types and quantities of materials and system requirements.

10. That use of Ministry funds and municipal taxes as financial support mechanisms for 3Rs programs be reconsidered in comparison to alternative, financially sustainable systems.

11. That the term "waste" be expanded to read "waste and resources", or be replaced by "resources", as appropriate, in order to reflect the changing view of waste as potential recoverable resources.

12. That the term "refuse-derived fuel from municipal waste" be clarified in relation to the use of recovered papers and wood for the production of ethanol fuel.

13. That the Provincial Policy Reference Guide and the Guide to Municipal Waste Management Planning be circulated for comments immediately.

14. That any action on the revisions to waste management planning be deferred until such time as the discussion paper on financial support structures for waste and resource management systems, being developed by the Waste Reduction Office, is released and receives public comment, and until a preferred strategy is identified.

MMA Discussion Paper, Municipal Waste Management Powers in Ontario

In its response, WRAC applauded the initiative of the Ministry of Municipal Affairs in addressing the existing arrangement of municipal powers and its shortcomings.

WRAC recognizes that confusion and uncertainty exist within the current distribution of powers and that modifications are required. While certain modifications are simply corrections of problems within the current system, other modifications represent expansion of municipal powers. Similarly, appropriate authority must be delegated to the private sector for aspects of waste and resource management that relate to their areas of responsibility, such as product and system redesign, use of recovered resources, and market research and development.

WRAC made the following recommendations in its response to the MMA Discussion Paper:

1. That review or expansion of municipal powers be based on the philosophy that authority and responsibility must correspond.

2. That delegation of authority to municipalities correspond with and be limited to their areas of responsibility.

3. That appropriate authority be given to the private sector for aspects of waste and resource management systems that relate to their areas of responsibility, such as product and system redesign, use of recovered resources, and market research and development.

4. That generators be responsible for the program implementation and costs of collection and flow of waste and resources, with municipalities representing residential generators.

5. That producers be responsible for the program implementation and costs of grading, sorting, quality control, and marketing of recovered materials.

6. That the public and private sectors share responsibility for the provision of disposal capacity with adequate safeguards for perpetual care.

7. That the Province establish mandatory source separation of specified materials for both the residential and IC&I waste sectors as well as appropriate targets.

8. That municipal compensation from disposal facility operators be limited to actual costs incurred by the municipality in servicing the disposal operation (e.g., roads, sewer) and costs to the community of social and environmental impacts if actual costs can be identified; that the power to recover costs be extended to both the municipality with waste disposal authority and the host municipality; that assessment of the disposal facility and property taxes paid to the municipality by the operator be considered when determining the amount to be recovered.

9. That the power of municipalities to regulate tipping fees of waste management facilities be limited to the ability to regulate their own operations.

10. That municipalities be granted authority to charge for the waste and resource management functions which they supply by class, volume, weight, or any criteria they choose.

11. That regional municipalities and counties be granted authority over solid waste disposal and 3Rs programs, within the sphere of municipal responsibility, but that local municipalities retain the authority to collect waste and resources, subject to terms and conditions established by the upper-tier municipalities.

12. That the term "waste" be expanded to read "waste and resources", or replaced by "resources" as appropriate, in order to reflect the changing view of waste as potentially recoverable resources.

13. That any action on expanded municipal powers be deferred until such time as the discussion paper on financial support structures for waste and resource management systems, being developed by the Waste Reduction Office, is released and receives public comment, and until a preferred strategy is identified.

14. That municipalities be granted the necessary authority to regulate the permitting of construction and development in order to ensure that adequate consideration is given to the requirements of material recovery programs.

MOE Initiatives Paper No. 4, Measuring Progress Towards Ontario's Waste Reduction Targets

Initiatives Paper No.4 represents an important step in the development of a system for monitoring and measuring waste generation and diversion in the Province of Ontario. In order to build upon this developmental work, WRAC recommended:

1. That the term "goal" be used to refer to the provincial waste diversion goals of 25% and 50% waste diversion.

2. That the term "target" be used to refer to the interim stages in reaching the waste diversion goal of 50% diversion.

3. That the formulae and the Waste Diversion Information System presented in the Initiatives Paper be used as a measuring mechanism to produce a "macro" view of success in achieving diversion goals.

4. That detailed monitoring and measurement be achieved through mechanisms associated with the development of industry associations dedicated to product stewardship.

5. That use of the formulae by municipalities be reconsidered due to the lack of information available to municipalities on private-sector waste generation.

6. That relevant available information and recommendations for determining baseline data be released for public review and comment.

7. That calculation of the current diversion rate with supporting information and explanation be released for public review and comment.

8. That Figure 1, "Illustrative Trends in Diversion and Disposal" be renamed to indicate that this graph is representative of provincial policy and is not necessarily illustrative of a trend.

9. That the term "municipal solid waste" be avoided in reference to waste from both municipal and IC&I sources in favour of the terms "all solid waste" or "municipal and IC&I solid waste".

10. That corresponding types and sources of waste be used consistently for both the baseline year of 1987 and the comparative year in order to produce relative information.

11. That use and applicability of the Standard Material Classes be clarified in order to avoid confusion and inaccuracies in the development of the Information System.

12. That an efficient and cost-effective data collection and monitoring system be developed in order to ensure that it is economically sustainable.